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Medicina Nautica:

AN

ESSAY

ON



THE DISEASES OF SEAMEN:

COMPREHENDING

THE HISTORY OF HEALTH IN THE CHANNEL

FOR THE YEARS 1799, 1800, AND 1801.

VOL. III.

By THOMAS TROTTER, M. D.

MEMBER OF THE ROYAL MEDICAL SOCIETY,
AN HONORARY MEMBER OF THE ROYAL PHYSICAL
AND OTHER LITERARY SOCIETIES OF EDINBURGH;

LATE PHYSICIAN TO HIS MAJESTY'S FLEET

UNDER THE COMMAND OF ADMIRAL EARL HOWE, K. G.

AND TO THE SQUADRONS COMMANDED BY ADMIRAL LORD BRIDPORT, K. B.

ADMIRAL EARL ST. VINCENT, K. B.

AND THE HON. ADMIRAL CORNWALLIS.

REQUIES EA CERTA LABORUM.

ÆNEID.

L O N D O N :

PRINTED FOR T. N. LONGMAN AND O. REES, PATER-
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1803.

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T O

SIR ROGER CURTIS, BART.

VICE ADMIRAL OF THE RED,

A N D

COMMANDER IN CHIEF AT THE CAPE OF GOOD HOPE, &c.

S I R,

THE first fruits of my professional studies directed to a naval subject, were inscribed with the name of Admiral Earl Howe: the last of them now solicit your protection. *Te nunc habet ista secundum.*

In appealing to your judgement on the present occasion, I am only led to imitate that line of conduct which induced me to publish the First Volume of MEDICINA NAUTICA. You were pleased to express your approbation of that Work, and an opinion that it could not fail to be useful to his

Majesty's naval service. Like the former, the present Volume was compiled on the spot of duty ; it must therefore partake of the imperfections of its predecessors. But if the subject of health, and medical establishments, are to be rendered complete by experience and observation, these pages have a chance of being consulted, when it will be of little importance how and where the author wrote. These labours were begun under your own and the auspices of the late Earl Howe ; and I trust you will perceive that I have preserved here the same devotion to the duties of my profession, which procured your countenance and assistance.

The brave man who exposes his life in the service of his country, has claims on the generosity of the Public beyond every other competitor. Besides the dangers of battle, he has to contend with hardships and privations of all descriptions ; and his diseases are of that class the most fatal in their issue. If therefore the language of truth and independence becomes any official situation, it belongs to the Physician of a fleet or army. Of all conditions in human life, next to infancy, the sick-bed is the most helpless. The finest examples of virtue have been practised

there, as being the fittest field for the exercise of the most disinterested benevolence. To the medical profession, as connected with public service, this office is almost exclusively confined. While this evinces the necessity of correct and punctual attendance, it also shows how minute and perfect all arrangements connected with it ought to be. But it appears in this Work, even in a political view, that the subject loses nothing of its importance. And if confidence is to be bestowed on the officers of health, their representations ought to meet with nice attention and redress. I have thus been zealous to record many of my applications for correcting abuses; for it may be a long time before any succeeding Physician of a fleet can have the experience which has fallen to my share; and if they are not inserted here, the hint for improvement may be lost. God forbid! that I should carry to the grave a single idea that could benefit the naval service of the country.—From that service I am now to retire, where I have spent all the best of my days, and to which my studies have been faithfully devoted. It must now think of me as a man who can have no share in its future operations, but who will be proud of its remembrance, as long as he lives.

Accept,

Accept, Sir, my sincere and grateful thanks for the numerous instances of personal attention and public confidence with which you have honoured me; as they have been an ornament to my past, so they will be the consolation of my future days. *Vale.*

Semper honos, nomenque tuum, laudesque manebunt.

T. TROTTER.

PLYMOUTH DOCK,

April 14, 1802.

CONTENTS:

	PAGE
INTRODUCTION — — — —	I
<i>Letter to Lord St. Vincent</i> — —	35
<i>Occurrences relating to Health</i> — —	52
<i>Contagion and Typhus</i> — —	144
<i>Letter to a Physician on Contagion and Pre- venting Plague</i> — —	246
<i>Ventilation of Ships</i> — —	269
<i>Variola—Vacciola</i> — —	299
<i>Catarrh—Pneumonia—Ophthalmia</i> —	307
<i>Phthisis</i> — — —	325
<i>Spasmodic Affections, &c.</i> — —	360
<i>Scurvy</i> — — —	387
<i>Extracts from Mr. Fleming's Journal</i> —	403
<i>Letter from Mr. Wood on Nautical Medicine</i>	410
— from Mr. N. Wilson on Fever, &c.	419
— from Mr. Nepecker on the Health of the Orion — — —	425
<i>Remarks on the Diseases of the Mediterranean, by Mr. Brigges</i> — — —	429
<i>Sick-Berth</i> — — —	441
<i>Diet for the Sick</i> — — —	447
<i>Nausea Marina, or Sea Sicknefs</i> —	458
<i>Malignant Ulcer</i> — — —	467
<i>Conclusion</i> — — —	505

DIRECTION TO THE BINDER.

The Plate of the Jennerian Medal to face page 121.

INTRODUCTION.

AT length this bloody contest hath drawn to a conclusion; and peace, wished for by every good man, is again restored to these devoted lands. A period so productive of great events will not fail to employ the pen of the ablest historians, and excite them to develope, for the information of succeeding generations, those mighty causes, motives, and passions, which have agitated and convulsed the social compact, and given birth to new forms of government throughout a large portion of Europe. If we are to judge from the manner of past historical writers, we may expect that those of the present times will not turn from the usual course of narrative, to draw the ghastly picture of sickly fleets or diseased armies, or to detail the frightful and horrible carnage of human beings, on the deck of a ship, or on the field of battle, who have bled in this long and sanguinary conflict. These authors have hitherto contented themselves with giving in the gross the *deathful bill of fare*; and only select such points for discussion, as serve to unfold the policy of a statesman, or the military talents of a general. Sometimes indeed we are told, that an army was forced to retreat from an enemy's country from sickness, as we hear of fleets being dispersed, and forced from their station by severe gales of wind. But the slipshod historian does not venture to expose himself to the

VOL. III. B pestilential

pestilential effluvium of a sick-berth, or hospital ward ; nor will he deign to count the numbers immured in the unventilated prison of an impress tender. When he offers animadversions on public councils and political measures, his topics of reprobation are profuse expenditure of money, exorbitant taxes, and posts bestowed on undeserving favourites. But he does not arraign the parsimony of treasure in preserving health, or the spare application of it in comforting the bed of sickness. If he condemns the traitor for sedition, or the soldier for cowardice, is no moral turpitude to be imputed to the public medical attendant that deserts the bed of a brave man, for the fee of a richer patient ? Is so large a part of the miseries of war to be forgot in the records of nations ?

It is thus that the page of history casts a false glare over the greatest of human evils ; and the young mind from thence is early taught to admire, what have been viciously styled the “ heroic virtues.” The flash of a red coat, a bush of plumes on the hat or helmet, and the alluring music of a regimental band, bring to his recollection what he had imbibed from the lesson of history, till his whole imagination is on fire,

“ To cry havoc, and let slip the dogs of war.”

Sentiments like these, so prematurely inculcated into the boy, have afterwards a powerful effect in forming the actions of the man ; for he will not listen to the groans that make the first part of a triumphal chorus, and will turn from the starving myriads of widows and orphans that form the rear of the cavalcade. It is this spirit that effects a rupture between nations.

Amidst those scenes of war, desolation, disease, and death, it becomes the task of the medical philosopher

philosopher and historian to collect such occurrences as point out the best means of enlarging the sphere of prevention, and by selecting the most prominent and striking facts, to establish rules that may direct future travellers and enquirers in the same path. Such has been the avowed intention of this work ; in the execution of which we have freely thought for ourselves on every subject under review, where we wish our labours to be measured only by the spirit of utility which we inculcate. This being the case, the fastidious reader, if he wishes to follow us, must lay aside all technical formalities, and that species of grimace that staggers to unmask official iniquity. Having thus regenerated himself, and no longer the slave of prejudice, he will be able to discern modern improvements from ancient errors, and will be convinced, that the practice of medicine may really confer a great deal of benefit on mankind, without prescribing a single dose of physic. I will then conduct him through the horrors of the impress' service ; the orlop-prison of the Liverpool guardship, and the press-room of a Bristol tender ; through the Royal William and Cambridge receiving ships, that have so often sent abroad the vapours of contagion. I shall then lead him through the spacious, clean, dry, and airy decks of a ship of the line ; where disease is prevented by the perfect obedience of every precept that commands health, where disorder is subdued by masterly discipline, and where the frown of an intelligent and accomplished officer can do more in the correction of crimes and immoralities, than a cat-o'-nine-tails. He shall afterwards view the pride of Nautical Medicine, the *Markham Sick-Berth* ; where a diet is provided, delicate, restorative, abundant, at the seaman's

own expence, that far exceeds the slow-paced improvements of an hospital ward. He will remark, in our walks through hospitals, that we have not hesitated to examine corners of darkness where the eye of observation never peeped before : the kitchen, the pantry, the pent-up bed-house, the clothes of infection unventilated and unwashed, have all been dragged into day, with a thousand other imperfections that marked those neglected institutions. But our scrutiny and corrections have not been limited to ships and hospitals. He will observe, that we have even claimed protection for the heedless seaman, in the hours of his recreation and pleasure on shore, against the sink of vice and drunkenness, to which he was exposed by a wicked police ; and two hundred gin-shops have been shut in Plymouth Dock, that have called down the execration of every thinking being on a magistracy, that dared to profane the functions of its office, in the very moment when sedition was lying in wait to corrupt the defenders of the country.

If in making these digressions from the usual track of professional inquiry, that others have either not observed, or disdained to explore, much human affliction has been prevented or relieved : the head of the brave seaman laid on a softer pillow, or a new path to improvement opened, a candid reader will overlook a casual ruffled feeling or angry expression, during a struggle with all the powers and prepossessions which stupidity, obstinacy, and malevolence have opposed against us *. At the same time, let the reader separate the

* It is curious to observe the hostility which has been offered, from different quarters, to my measures of safety in the fleet.

the act of the executive officer of health in a fleet from that of the private physician, and distinguish between the duty of a public censor, that ought to wink at no abuses, and the forbearance that may be expected from an individual. My future retirement will then be secure from persecution and misapprehension; while my declining years shall be solaced with the thought, and look back with pleasure on the laborious but virtuous task, of having contributed to the comfort and happiness of thousands.

In a work like *Medicina Nautica*, so nearly connected with the interests of the British Navy, gleaned amidst its laurels and protected by its banners, it is impossible to pass over in silence such a group of glorious achievements as shine forth in the naval transactions of the present war. Whether we view the general actions between fleets, or those between single ships, as well as the numerous instances of the enemy's vessels being carried by boarding, we meet every where subjects for admiration in the display of consummate skill, superior seamanship, and active courage. The five general victories are each distinguished by peculiar traits of talent

A Lady of rank, who was in the custom of giving large dinners to small parties, when the scurvy, in 1795, had put in contribution all the lemons and oranges of the country, complained that none could be procured for *her company*. "It is a shame," said her Ladyship, "that the nation's money should be expended in this way: Captain P. tells me that these things are not good for sailors; and, what is worse, this physician can persuade Lord Howe to any thing."—Ladies of another description, namely the *green* women in Portsmouth market, combined *not* to sell a cabbage, or any thing, to the physician's servant. "Your master," said they, "has spoiled our trade by sending all the *sallad* to Spithead."—When the gin-shops were shut in Plymouth Dock, it was prophesied that I should be "*found murdered in the streets.*"

and heroism. The first of June, under Earl Howe, was signalized by the *novelty of attack* and *hard fighting**. The fourteenth of February, under Earl St. Vincent, for *promptitude and intrepidity* in assailing an opponent nearly double in force; but at the same time *caution* and *penetration*, by what is called *knowing your enemy*. Lord Duncan's battle was characterized by *hardihood* and *skill in closing* with the Dutch in blowing weather on a lee shore. The battle of the Nile was glorious and unrivalled by attacking the enemy *at anchor*, and *deceiving* him by engaging on the inside: The victory off Copenhagen seemed to unite the *seamanship, valour, and decision* of all the

* A petty work on Naval Tactics has had the impudence to claim the merit of this battle;—a claim that every officer present has denied. The spirit of the general signal “*for passing through the enemy's line, and engaging to leeward,*” has no precedent in the records of sea-fighting. It existed only in the capacious mind of the immortal hero that directed it. The French had formed no idea that the British Admiral would ever hazard the advantage of a windward situation. But what Lord Howe expected from this signal was, first, to take the enemy by surprise, which he knew would effectually throw them into confusion; when superiority in seamanship, and in the use of the great guns, would soon decide in his favour. A system of naval tactics is a solecism in language. When a fleet is once engaged, every ship must then annoy the enemy her own way, or succour a friend when seen necessary. The French Admiral vainly thought that the Queen Charlotte would take her station at due length to windward of him. Nay, the quarter-master at the Charlotte's helm cried out there was not room to pass between the French Admiral and his second: “Steady” replied Captain Bowen, who was master. The captains of the guns at their quarters called out, “*Bravo! we are not to fire till we can see the whites of their eyes.*” When such iron nerves as these, in a future war, and under the present internal economy of our ships, shall again conduct a British fleet into action, it requires but little of the spirit of prophecy to foresee the issue; and there will be little appeal to Mr. Eldon's *dry-land* tactics.

preceding

preceding battles : human efforts can go no farther. To these victories of the British navy Europe owes her independence, while her armies have either been annihilated, or forced into hiding-places. If the ambition of the present French government, like some of the former governments of that country, aims at universal empire, the first step towards that must be the destruction of the naval force of Great Britain. To those persons who are partial to the military fashions of the day, this may perhaps appear but a matter of secondary consideration, and they will look to a British army. "The French army," say they, "we now know is not invincible; we have beat them in Egypt, and they dare not attack us at home." I have as high an opinion of the soldiers of this country as any man alive : with the assistance of detachments of naval officers and seamen, who helped them over the lakes and canals, they did most gallantly drive the French out of Egypt. But in the event of a future war between the two countries, (which, under auspicious Providence, I hope is at a very great distance,) it is to be expected that we may be assailed in a quarter much more vulnerable than our own shores. If we can suppose for a moment that our fleets are beat from the face of the deep, and the Republican navy triumphant, does it follow that a French army would immediately land in England? No. The genius of Bonaparte is crafty, inventful, and full of projects. He will amuse and keep on the rack our national credulity with sham embarkations of troops, flat-bottoms, and gun-boats; but his enterprize will be directed somewhere else. If I may be allowed to borrow an allusion from physiology, he will first paralyse

the extremities, to cut off the vital current from the heart. He will overpower with his numerous battalions your West India islands, your Indian possessions; and thus, by depriving you of colonial wealth, he will leave you to court your falling funds and ruined finances. Will a huge army, as brave as it could be wished, be able to console the wounded spirits of Englishmen under such a reverse of fortune? You may then drag your field-pieces to the beach, and line your coasts with riflemen; they may prevent the predatory excursions of a privateer's crew, but they will exhibit a poor substitute for a naval defence. The first defeat of a navy to this country must be the first step to its ruin. Bonaparte knows how to improve victory; and he would follow up the victory over a fleet by seizing your colonies, not by invading England: for he must be aware, although a soldier by profession, that the spring and energy of a naval power depend on commerce, as being the nursery of seamen.

The very voice of Nature, on account of our insular situation, calls upon this country, "TRUST YOUR WOODEN WALLS," as the responses of the oracle did the Athenians of old. If that voice is to be obeyed, the spirit of naval enterprize must be cherished and preserved; and the present moment unfolds the necessity of infusing into it new vigour, such as did not plead in its favour at the conclusion of any former war: *Provision must be made for the officers of the navy on half-pay.* Let not men, educated in high notions of professional dignity, from the applause that has followed all naval operations during the late war, be consigned to obscurity by the peace for which they have bled. This navy is not to be preserved against the decay of age, or the assaults of time and enemies,

enemies, by mere docking, or establishments for encouraging naval architecture. The French have always excelled us in building what are called fine models; and, I believe, without fear of being contradicted, that they will continue to excel us. But it will be our own blame, if we allow even this excellence to pass to our disadvantage. The superiority in seamanship, and in the use of the great guns, secure to us all the advantages of their inventions and improvements.

The practical and manual duties of seamanship are not difficult to learn: navigation and astronomy, branches of science necessary to the nautical art, may even be obtained on shore. But something essential will be still wanting to perfect the naval officer; these are the habits which are peculiar to the sea-life, which can be acquired by early education only. Our young officers generally enter into the navy about eleven, twelve, or thirteen years of age; I think it ought not to be later. The mind at this period is pliant, and easily formed to new customs; promptly imitates whatever is held up by way of example, and associates with facility to the manners and actions of others. It is thus that the nautical character is completed, and taught to view with indifference those dangers, difficulties, and privations peculiar to the profession. We see, during a war, numbers of men who come into the navy, that in order to be useful are stationed in those parts of the ship where they may best learn the duty of a seaman: many of these certainly acquire much useful knowledge; but they are not the men that the discerning officer will trust on trying occasions. They are always to be discovered by their walk and gesture; and if they attempt to narrate any manoeuvre in seamanship,

manship, their language at once betrays the want of an early education. An illustrious foreigner was viewing Portsmouth dock-yard some years ago; and when the Naval Academy was pointed out to him, he expressed a strong curiosity to see those young cadets, that were destined to wield the naval thunder of Great Britain against her enemies. But how much was his surprise when he only beheld three-and-twenty boys, instead of five hundred, which he expected. An officer who was present relieved him from his embarrassment by pointing to Spithead, where a large fleet then lay at anchor: "*Yes,*" said the foreigner, "*there you educate your boys; and thus, when they grow to men, they make the sea their element.*" The proportion of officers, now on the list, who have been educated at the Portsmouth Academy, to the others, are about one to a hundred. It were therefore much to be wished, that more attention should be paid to other branches of education in ships, which might be effected with no great difficulty, and at very moderate expence.

If there is any truth in what I have said, that a naval and nautical education can only be acquired by early habits and associations with a sea-life, it is plain, that a series of years is required to form a navy even in this country. Trading vessels may be a sufficient nursery for common seamen, but his Majesty's ships can alone serve for the education of officers. A constant succession of young gentlemen must be rising to keep the number entire for any emergent service. When this mode of training naval officers shall be neglected, and their pay in dear times becomes not equal to their support, they must retire to obscurity with broken hearts. They are at least entitled to the half-pay of the army officers with
whom

whom they rank; and till this odious distinction is abolished, the justice of their claims on the country that they defend cannot be satisfied.

When Sir William Elford, in the last session of parliament, mentioned some proposition of half-pay for the militia surgeons, the House of Commons most readily felt for that valuable body of officers. Sir William is himself a militia officer, and deserves the thanks of his country for remembering the case of so many neglected individuals. But how comes it that no person in that assembly can be found to do as much for the navy surgeons? Because there are twenty army officers in Parliament for one of the navy, is it acting with the feelings of Englishmen to leave the medical class of the navy to shift for themselves *? Surely the period must be near when some member will take upon him the defence of

* It has commonly been remarked, that the heads of our rich families flock to the army, while the junior branches betake themselves to the navy; but it is perhaps not generally observed, that the naval list at this time only contains the names of three officers who were heirs to a peerage at the time they entered on board. These are, Lord Garlies, Lord Proby, and Lord Cochrane. The first distinguished himself at Martinique, by laying his ship close to the fort, *in the good "old way,"* as expressed by Lord St. Vincent; and the last led his crew of fifty men, from the Speedy, on board of a Spaniard with eight times the number, and took her.

Nevertheless, I believe the good people of old England have no objections to see their ships commanded by poor men; it saves at least the appointment of *ailing captains*. Our fleets have therefore made their parade the enemy's coast; which, under other circumstances, might have loitered in our own harbours, and the navy been mortified with the *monotonous* complimentary speeches of some reviewing general. The elder tons have thus had some amusement in firing *feux-de-joye* on the naval successes of their younger brothers.

a cause,

a cause, for which every generous reason pleads; and convince that assembly, that it is twined with the existence of our navy.

But farther; the military events of the late war, the defeats and disasters which have followed our army almost every where, hold up such a picture of adverse circumstances as have seldom been equalled in the annals of any people. It is not that want of success only has been the fate of military operations, but the diseases and mortality that followed are horrible to think of. It may again be repeated, that our military character is confirmed by the successful campaign in Egypt. But even admitting this in its fullest effect, that campaign would have been much easier prevented three years before, had Lord St. Vincent been supplied with ten sail of the line a few months sooner, to have blockaded Toulon, at the time the *Ægyptian* armament was preparing. Now that these horrors are past, it is devoutly to be wished, that some dispassionate historian may be found, who, divested of all party prejudices, shall write only for the benefit of his country, and in an independent manner hold up such lessons of misfortune, as may warn posterity against squandering the resources of these kingdoms on military expeditions.—The only apology which I can offer for entering into a disquisition of this kind, that to some may appear foreign to my subject, is the sincere attachment I profess for the Sovereign on the throne, and his successors; the veneration I feel for the British Constitution; and the regard I must ever express for the naval service, as the only bulwark of the British Isles.

The present Volume, I trust, will be found to be not inferior to either of the former. The dismissal of the hospital ship cut off much of my communication with the fleet; and in some parts I appear rather the historian of the afflictions of the sick, than their physician. Lord Bridport ordered all the stores of that ship, which had been the pride of our service to complete, to be landed without ever consulting me, whether any thing ought to be reserved, lest the fleet came to action, or for other eventual malady. The consequence has been, that the number of deaths at sea has been very great beyond the preceding seasons, and the sick deprived of all the comforts which the Admiralty, under Earl Spencer, had so bountifully granted. Fresh meat and vegetables, it is true, were liberally supplied in 1801, off Ushant; but these are only a few out of many delicacies with which our hospital was stowed. My sentiments on these subjects are not fashioned to the opinions of any set of men; but, what I conceive to be better, they are the language of British benevolence, and the practice of a physician who, amidst all his foibles, has not been known to discover the spirit of temporizing. Studies similar to these procured me the appointment which I have the honour to hold; they have supported me through much bodily fatigue and mental exertion; and they shall attend me through this last of my labours, in the naval service of my country. Many improvements of acknowledged utility have originated with me, and many have been suggested that others will have to accomplish. In this, as in my former Volumes, many official representations are introduced for the information of our successors. In the event of a long peace, they might otherwise be lost to the public. The navy

at this moment abounds with young men of the medical profession, who are earnestly attached to its studies, and ardent after improvement. These gentlemen, at some future day, will occupy the posts of honour in the department; but the same prejudices that have operated against me as a beginner of correction, are not likely to be opposed to them in the same degree. And in this manner will be attained, in fifty years, that perfection of medical duty and arrangements, which, I think, might be brought about in as many days. Had I possessed the power, as I do the inclination, this task should not have been left to others.

Medical readers will be astonished to see, at this period of a triumphant navy, so many abuses left to prey upon health, and that so little desire after improvement should be discovered. But it is with the health of the public as it is with the individual, the value of it is not thought of till it is lost. I have therefore inserted the copy of a *Letter*, to the present First Lord of the Admiralty, “*on meliorating the encouragement to medical officers.*” It exhibits in a concise view a radical method of reform; and, I hope, will be found equally consistent with the benefit of service and that of the surgeon. It is at least proper that long experience on this subject, as well as others, should be recorded, till a disposition shall be manifested to reduce it to practice.

Such *occurrences* relating to health as are any how interesting are detailed, as in the former Volumes. Some things, it may be remarked, might have been better omitted: “*but my pen guides me, I guide not it.*”

The subjects of *Contagion and Typhus* are comprized under one article; which enables me to offer frequent practical remarks, as suggested by
matter

matter communicated by the surgeons. These will be found rather to enliven the narrative than to interrupt it. This head affords many shocking examples of the horrors of the impress service: would that I possessed eloquence sufficient to convince statesmen of its iniquity; for the facts are palpable! If it is wanted to subdue effectually that spirit of insubordination and revolt, which has so repeatedly appeared this war, it must be by finding *another method* for manning the navy. Make the service of your seamen voluntary, and tumult will be at an end.

Some *Thoughts on preventing the Plague* follow next. They were written three years ago, when that disease was much the subject of conversation in this country.

A distinct article is now allotted to the *Ventilation of Ships*. This, I hope, will be useful to officers; for it is of the first importance in preserving the health of a ship's company. It might have been extended to a much greater length, in explaining theory; but for practical utility it will be deemed sufficient, as it fully unfolds the causes that generate foul airs.

The *Small Pox* continues to excite our vigilance: and the *Cow Pox*, that first blessing from the hands of medicine, is now received among sea diseases, on a prophylactic plan. I have only to regret that I could not accomplish my purpose on this business.—*Catarrh, Pneumonia, and Ophthalmia*, are connected in one article.

The subject of *Phthisis*, is a new discussion in *Medicina Nautica*. If the treatment of the disease receive no advantages from our animadversions, the history of it is enlarged. The causes which have rendered it frequent in the Channel, especially in 1800, are not calculated to raise pleasurable feelings.

feelings. But what human being can brave variety of affliction equal to a British seaman!

Under the term of *Spasmodic Affections*, I have introduced various complaints of the dyspeptic, hypochondriacal, and nervous kind. These diseases are by no means uncommon in a man of war at all times, but they have been very frequent of late. It is the more necessary to guard the inexperienced surgeon, as they are often mistaken for complaints that require a different mode of treatment.

We continue to accumulate such facts on the history of *Scurvy*, as may still improve the method of prevention and cure. In this, as in some other subjects, we have looked beyond the mere means of cure; our views are directed to preserve the strength and vigour of muscular action, for the purpose of enterprize.

Some valuable selections are made from the communications of our numerous correspondents, as incidental to our plan. Parts of these are from the Mediterranean, which station has been the scene of considerable activity during the operations in Egypt and Malta.

For the first time, we offer the plan of a *Sick Berth*, which is to be considered as the hospital of a ship of the line. I have also given a method of providing a *Diet for the Sick*, that is much superior to any thing of the kind that has ever appeared in the navy. A mixture of regret accompanies this part of my work, that I have not been able to make this improvement general throughout the fleet and service at large. But it is necessary to save it from the wrecks of time.—*Sea-Sickness* has also, for the first time, met with our notice.

The history of the *Malignant Ulcer*, by the additions of the present Volume, is rendered very full.

full. I wish I could say that they have pointed out any successful method of cure.

The contents of this Volume, in different parts, are so much a sequel to what I have written before, that it is necessary to remind readers of it, lest they should form opinions partially. For instance; in the article Contagion, where I have exposed the bad effects resulting from the impress service, it will be seen in the first Volume, that I had suggested means of guarding against all this calamity as a source of disease. In every disquisition it will be easily perceived, that the author has had one object in view, to which all others have been secondary.

Some parts of this Volume will point out to officers and surgeons the necessity of keeping a check on the arrangements in hospitals. I think the service is likely to be injured by making the appointment of captain and lieutenant permanent. A more certain good would have been secured by changing them every three years. We might by that means preserve all the improvements which take place in discipline throughout the service; as well as what relates to purification, ventilation, and cleanliness. This form would effectually prevent all that species of sloth and indifference which is natural to the constitution of an Englishman when he finds himself in possession of a snug house and good income. It is true, that these institutions are not likely to be again of that importance to the navy, that they were when they first attracted our notice: but it is proper to show what the service has escaped from, by way of preventing the recurrence of similar abuses. I do not mean from this to infer, that any accommodations in a ship can be made equal to those that ought to be found in an hospital; but while

Vol. III. C discipline

discipline improves good health, and an effective force must naturally result. I continue to lament whenever service becomes so urgent as to leave a brave man to die at sea instead of an hospital: and the medical profession, however wrapt in the solemnity of technicals, is at best a scoffer of human affliction when it deserts the duties of sympathy and benevolence. From this it will be known that I am no favourer of the new tenets, that hold forth very different examples.

The neglected state of the naval hospitals arose partly from the small stipend of the medical officers; but this could not justify some occurrences that I must relate; and which I leave as a warning to others. To some these examples may appear disgusting: so they are to my eye. When I hear of the medical attendant of a public institution having accumulated thirty or forty thousand pounds by the private exercise of his profession; by an irresistible impulse of imagination the ghosts of so many thousands of brave men rise to my view, who have fallen into premature deaths by unprincipled neglect.

At the beginning of this war a seaman fell from the top of a ship sitting at Plymouth, and was wounded dreadfully. He was immediately conveyed on shore, but nobody could be found to open the gate of the hospital. At last access was obtained: but not a surgeon could be found; he was attending a gentleman of great fortune in Cornwall. It is to be added, the man died of the hæmorrhage from his wound.—Captains Rotheram, Sutton, and Worth can relate the particulars of this case.

A post-captain, so ill as to be carried on shore in his bed, came to sick-quarters, and, for the convenience of such attention as he required, to

the house of a friend. The first visitor was a clerk, who demanded that he should come to the hospital and answer muster, or be *run* on the books. On the third day a private physician called upon him, saying that he came at the desire of the surgeon of the Royal Hospital, who was attending the *accouchement* of Lady M.—— at sixty miles distance !

This affair happened since the partial reform of the hospitals : and this was a part of the new morality.—Captain R. Dacres makes the case longer than I can.

To complete the deformity I will relate another incident, which happened since I came to this neighbourhood. An assistant surgeon had the duty of *bleeder* ; that is to say, he came at a time, perhaps when it best suited his shop, to bleed the patients. The other assistants, who took the *receiving duty* in rotation, which confined them for a week entirely to the hospital, thought it but fair that the bleeder should take this in his turn. To that he replied No, for he had extensive private practice ; and, to the contempt of all public service, resigned, when he could no longer make it a *sinécure*.—A vacancy for physician soon followed ; and this gentleman, who was now, by some mistake or other, armed with a diploma, though his medical education was confined to a neighbouring village, had the effrontery to offer himself a candidate. To such insults the sick-bed of a brave man may be exposed, as if every haberdasher in medicine were competent to the attendance of a naval officer and seaman ! If there is any truth in this statement, which is a small portion of the whole, was there not a necessity for some person to step forward and rescue the naval service from such opprobrium ?

By the countenance of officers solely have I been encouraged to persevere.

Amidst the deficiencies of Plymouth hospital a contiguous decent burying-ground is much wanted. The present one is a bit of waste land belonging to the corporation of Plymouth, where the seamen have such a dislike to be laid, that on dying, if they have as much as will defray the expence of being carried to a church-yard, they leave a will to that effect. The regard of a grateful country ought not to quit the brave man even in death; his cold remains ought to be interred with solemnity and guarded from insult; for these attentions inspire his living companions with the love of their country.—The chaplain ought also to reside within the walls.

The whole war has now passed over and no operation room has yet been fitted there. It is not decent to operate in a full ward, where the cries of the patient offend others. Even Haslar hospital owes this improvement to the late Mr. Robert Dods; a man who performed some of the finest cures that ever came from the hand of a surgeon.—But I must stop here, for innumerable imperfections still remain to be mentioned. In my enquiries into these departments, I solemnly profess to have *set down nought in malice*.

The farther our experience extends, we continue to view the British seamen in a character that differs widely from all others in polished society. Some of their diseases in this Volume show that the subject has not been exhausted. The following anecdote, copied from life, is so strong an example of their singular manners, that I cannot forbear to insert it. It is communicated by Mr. Simpson of the Fishguard. “ Three years ago,
“ when

“ when I was surgeon of the Kangaroo, it was our
“ misfortune to encounter a severe gale of wind in
“ Dublin bay. By a train of adverse occurrences
“ we were compelled, at the imminent hazard of
“ our lives, to cut our only remaining cable, and
“ attempt to get over Dublin bar. This we
“ happily effected after very severe exertions.

“ When moored in safety in the river Liffey ;
“ the people, being obliged from the state of the
“ ship to be moved into a light collier, gave
“ themselves up to every excess which seamen,
“ who have recently escaped from imminent perils,
“ are then accustomed to. An almost general
“ intoxication prevailed among the heedless crew
“ during the whole night. The unvarnished tale
“ of Othello was twice told over, with the addi-
“ tion of every hyperbole which the fertile inven-
“ tion of seamen, of drunken seamen, could devise*.
“ The can went merrily round the whole night.
“ But alas ! the morning sun ushered in a scene,
“ which, at this distance of time, thrills my heart
“ while I relate it. Two boon companions had
“ enjoyed themselves in a superior degree ; both
“ of them the day before in perfect health. They
“ retired at bed-time to keep it up for the night,
“ having by some means procured abundance of
“ *whiskey*. Libation after libation of this poison-
“ ous draught rendered them insensible. When
“ the hands were turned up next morning one was
“ found dead, and the other sitting by him with the
“ greatest marks of kindness and affection ; alter-
“ nately kissing him and offering him liquor ; and
“ encouraging him by every endearing expression
“ to drink, and then pouring it into his mouth.—

* *Vide* Vol. I. Discourse 2d.

“ By the utmost exertions the life of one was saved,
 “ but the other irrecoverably perished!

“ Upon examining the pockets of the deceased
 “ the inclosed scrap was found, which I have care-
 “ fully preserved. In these *formulae* we have as
 “ well the method they have of entrapping a girl,
 “ as a rat and coney; exclusive of the means they
 “ use to deceive the doctor.”

These receipts partook of that credulity for which seamen are noted; and some of the ingredients were dangerous, such as Spanish flies in the love potion. The rat, hare, and rabbit, were enticed by perfumes: the venereal disease cured by bitter apple, gamboge, and copaiba: some stimulating oils are ordered to excite swelling and inflammation: and a rupture to be produced by burnt cork, castile soap, &c.—Such are the men to whom this happy land of liberty owes her security! whose character forms the widest extremes to be met with in a human being.

The following paragraph is taken from the preface of Professor Hufeland, to Dr. Warner's translation into German, of the first Volume of *MEDICINA NAUTICA*.

“ It is well known how much we are indebted
 “ to the English *MEDICINA NAUTICA*, for many
 “ improvements in our art. The present
 “ work is a new demonstration of it; and it un-
 “ questionably classes among the best productions
 “ of the modern English medical literature. An
 “ exact acquaintance with the excellent manage-
 “ ment of the English Nautical Medicine must be
 “ pleasing

“ pleasing to every one ; and they will here per-
 “ ceive important and attentive practical observa-
 “ tions on typhus, scurvy, contagion, and the
 “ means of guarding against it ; bilious fever,
 “ dysentery, rheumatism, and on many other
 “ subjects. The Author, in his late Treatise on
 “ Scurvy, had brought himself under some suspicion
 “ of being attached to hypothesis ; in this work,
 “ however, nothing of the kind is to be found.
 “ For the most part he delivers the result of pure
 “ experience, and treads the path of an undevi-
 “ ating observer of Nature. For instance, it is
 “ certainly no longer an hypothesis that lemon
 “ juice is the best remedy for scurvy ; since more
 “ than a thousand cases are here produced,
 “ which have been cured by that remedy alone ;
 “ and the disease is always rendered worse by
 “ brandy and other stimulating medicines. It is
 “ certainly a very important fact, and highly cre-
 “ ditable to the present age, where a part will
 “ explain every thing from stimulus, and nothing
 “ from chemical action on the change of matter.

“ I am so much the more pleased, that the
 “ work has found a faithful translator in M. D.
 “ Warner, and one who is so well versed in both
 “ languages. And I must also remark, that the
 “ difficulties he had to encounter were greater than
 “ are usual in translations ; because the author’s
 “ style is frequently obscure and perplexed ; and
 “ abounds with many almost incomprehensible
 “ *nautico-technical* expressions.

“ *Jona*, May 20, 1798.”

For the English copy of this Preface I have to
 thank Mr. John Bell, surgeon’s mate of the *Castor*,
 and now surgeon of the *Pelican* ; a young man
 of great promise to his Majesty’s naval service.

The candid opinion which the celebrated professor and physician has been thus pleased to give on the merit of our labours is highly gratifying to myself, as it must be to the surgeons of the fleet, whose communications form so large a portion of the whole. I believe, however, it would not be easy for me to obviate the complaints of Dr. Hufeland and others against my style and manner, as the work has been compiled on the spot of naval duty, and at the intervals of relaxation from professional visits. What it loses therefore in elegance of expression, and accuracy of arrangement, it gains in the unvarnished details of practical occurrences, and in the faithful narrative of such diseases as claim animadversion. These remarks apply equally to the present, as to the preceding Volumes of *Medicina Nautica*.

With respect to the sea-phrases, said to be almost incomprehensible, such a remark was likely to come from a physician who resides in an inland part of Germany. But these phrases are so familiar in the English language, from the navy being the constant theme of applause, as it is the bulwark of Great Britain, that they fall insensibly into our history of events.

There was one part of my establishment that I should have been proud to show to the translator and encomiast of *Medicina Nautica*; I mean Mr. Milligan's Bill of Fare in the *Medusa* hospital ship, before Lord Bridport dismissed the ship. They would have there seen British generosity in its genuine form; a seaman recovering from sickness sitting down to a dinner that might have satisfied a prince; and prepared for him at the expence of the country.

A work on the Diseases of Seamen, written a century ago, and the first on that subject, was lately put into my hands by Mr. Charles Wallace of the Renown*. This performance appears to have obtained a considerable degree of reputation; for the first Edition was soon translated into Dutch by Professor Bidloo, and was read by thousands in the seaport towns of the East Countries. In the Preface he quotes paragraphs from Burchet's Sea Memoirs, to show the importance of his subject; from which we learn that the poor navy surgeon had no remuneration for services after his ship was paid off. A set of new men, as they are called, were therefore employed on all occasions; so that medical knowledge of naval matters could never be acquired by long experience in one surgeon. Burchet, in his Memoirs, speaks of expensive expeditions being laid aside from the unhealthfulness of seamen, as it has often happened since that period; but, although that has been less the case during the present war, human nature continues much the same. It is thus with the health of the public, of a fleet, or army, as we observe with an individual.

The West India expeditions, of old times, like those of the present war, had been often frustrated by the sickness and mortality of men employed. Dr. Cockburn laid some proposals before the Admiralty, which their Lordships thought proper to transmit to the College of Physicians for their

* Sea Diseases; or a Treatise of their Nature, Causes, and Cure. Also, an Essay on Bleeding in Fevers, showing the Quantity of Blood to be let in any of their Periods. The second Edition, corrected and much improved, by W. Cockburn, M. D. late Physician of his Majesty's Fleet, F. R. S. and of the College of Physicians, London. Printed for George Strahan, London, 1706.

opinion, before they were tried. The College, however, evaded the question, and the Doctor's plan fell to the ground. This treatment, we observe, is very like what we have sometimes experienced.

He enters at large into the nature of the sea diet as the cause of scurvy; and insists much, in his way of reasoning, on the undigestibleness of the different articles; from which it is easy to see where Lind took his opinions of the production of that disease. Not a word is said of recent vegetable matter, or any thing of a method of cure. The men recovering from other diseases suffered much from this diet; indeed no delicate kind of food suitable to their appetites had been allowed. The use of tea and sugar, now so common among our seamen, was then unknown. Like all the old writers on scurvy, he talks of the shulkers, a word scarcely known in the present day in the naval vocabulary as being most liable to it. "And to confirm this observation," says he, "the people that suffer most by diseases on account of their idleness aboard the men of war themselves, are boatswain's favourites; for they are over-run with the scurvy, while those whom he with full power and authority turns out to their watch, enjoy a sufficient stock of health, as do likewise the better sort of them, that put themselves forward by being diligent in their business. This lazy temper among some seamen, and most of the pressed land-men, is the true original of the genuine scurvies that are commonly to be met with at sea."

The seamen in those days did not like the bargoo, because they had too little butter to sauce it. A few years ago we obtained sugar or melasses for that purpose; but the benefit to the health of the people has in many ships been prevented from
the

the avarice of the purser, who neglects to demand them, as the saving of oatmeal is of great consideration.

How like to some occurrences in this Volume is the following remark on the *lodging* of seamen :
 “ This is as convenient, warm, and easy, as may
 “ be at sea, and for such a number of men; yet
 “ what by the pilfering of hammocks one from
 “ another, their lying on deck, or betwixt decks,
 “ when they are pretty warm after a can of flip;
 “ and the pressed men’s real want of clothes they
 “ sensibly contract a cold, which is the beginning
 “ of most of their miseries.” This leads him to the production of Fever; and he finishes with a philippic on the chemical pathology of that day.

In Part II. speaking of means taken to provoke sweat, “ and the Irish of old, by lapping themselves up in blankets thoroughly wet in cold water.” Can any modern physician describe this process and its effects on the accession of fever?

Having related Dr. Willis’s case of the young woman in fever who wished to go a swimming, being indulged she recovered; he then adds,
 “ Some such like cases happen very often to our
 “ sailors, who in the time they are delirious, or
 “ have calentures, (this word our surgeons use
 “ for violent fevers, yet it is only a general word
 “ in Spain for a fever,) when lying in their hammocks in a calm summer’s day, they see the
 “ sea through the gun ports very plain and smooth,
 “ and imagining it to be a green meadow, get up a
 “ walking, and fall into the sea, if they are not
 “ stopped in their way; but if they get at last into
 “ their hammocks, they sweat at last very plentifully (after the fousing. T. T.), and shake off
 “ their fever.” Is not this nearly allied to the
 practice

practice of Dr. Currie, the affusion of cold water ? The surgeons of the present day give no such account of this disease (phrenitis), which was said to be peculiar to the Mediterranean.

He next speaks of the good effect of blisters in fevers ; and relates cases of successful practice as well in fevers and ague by opium, quinaquina, &c.

In Observation XV. is a case of scurvy, where he reasons like a modern, and prescribes recent vegetables, and an antiscorbutic electuary successfully ; and laments that there is no provision made against the disease. The forms adopted by ourselves during the present war, effectually correct all former abuses.

In Observation XVII. he has forgot entirely that he was physician to his Majesty's fleet, assumes the character of an empiric, and conceals the name of a medicine that he gave in diarrhœa ; "*a dose of a powder I give in such cases.*" !! Again, he says, " I conceal this medicine because I think " it better than the Fr. ipecacuanha itself, by " which Helvetius made so plentiful a fortune." He now shows a cloven foot ; *auri sacra fames !* This is the spirit of mammon that has opposed the progress of benevolence, as well as medical science in naval stations. But in attempting to correct it, alas ! one swallow, I find, does not indeed make a summer !

In Observation XXVII. is a case of *melancholia hypochondriaca* in the captain's clerk of the Edgar, very much like what we have often met with in the fleet. He treats it, judiciously, with a vomit, purge, and a strengthening electuary, adapted to the dyspeptic stomach.

In Observation XXVIII. is a case of gonorrhœa, when quackery again is discovered. Which he cured " without one grain of mercury ; turpen-
" tine,

“ tincture, decoctions of woods, injections, and other
 “ medicines. I could very willingly communicate
 “ this way of curing for public use, if I might *in*
 “ *honour*; being no longer at my own liberty to
 “ dispose of it, since I have communicated this
 “ method to a *learned member of our college*, in
 “ exchange of a practice he values very much.”
Oh! tempora! Pretty fellows of a college: Par
nobile fratrum!

The Essay on Bleeding in Fevers, is the weakest part of the book, and is rather a jargon of words than sound reasoning on practical facts.

From what we observe in page 100, the physicians of fleets at the beginning of the last century had to treat a body of men subject to the same excesses and indiscretions as those of our own times. They had “ their Saturday evening cabals, “ where they remember their wives;” which, when moderate, might be lawfully encouraged, and was said to assist the digestion of the diet. “ But are often ill husbands, exchanging all at “ once, and destroying the whole purchase at a “ down-sitting; so that being got drunk, and not “ being able to crawl into their hammocks, they “ spend the night fast asleep upon the cold deck, “ and contract those sicknesses which attend an “ interruption of transpiration.”

I could have wished to insert some important surgical cases into this Volume; but the prescribed limits would not allow it. These were conducted with uncommon ability, by Mr. Smith of the Pompée; Mr. Willes of the Centaur; Mr. Clifford of the Courageux; Mr. Allen of the Formidable; Mr. Lloyd of the Barfleur; Mr. Magic
 of

of the Princess Royal, now surgeon of marines at Plymouth; Mr. Cumings of the Ramillies; and a recovery after an amputation of the thigh, where the previous loss of blood had been so great that the patient scarcely appeared to live, for the first fortnight, by Mr. Bury of the Unicorn. On the whole; as far as I have been able to learn, in both general and single actions, the abilities, attention, and humanity of the surgeons have kept pace with those astonishing exploits of the naval officer and seaman, that have attracted the applause of the world. But the want of assistants, from the deficiency of surgeons' mates, has been complained of every where.

From the interest which I have taken in the cause of medical officers from my first becoming an author, the subject naturally recurs to me, in bringing this last of my labours to a conclusion. I must therefore invoke the different tribunals of science and literature, as they may honour this Volume with a perusal, that they would well consider the arguments which I have produced in favour of increased encouragement to these gentlemen. Physicians to fleets are equally subject to a narrow establishment with surgeons; and one of the most painful consequences of a small income, must be the inability to keep pace with the progress of medical science in the purchase of new books. With this last wish in behalf of a body of men to whom the public owes much, I now conclude; and thus,

My beloved Navy!

Farewell!

CAWSAND BAY,
Feb. 26, 1802.

March 30th.—To the undermentioned surgeons of the Navy List, I have to offer thanks for a compliment of uncommon value. A compliment that lays me under the more obligation, as being conferred at a time when, neither from personal or official situation, it was in my power to make them any return. The medical records of the fleet will derive credit from this transaction, as a pledge of that friendship and harmony which have cemented our duty in behalf of the public service. The profession of medicine has acknowledged a flattering regard to this compilation; and in the present instance, I trust, it will find a larger compass of practical matter, than has usually been given to the world in a single volume.

Inscription on a Maffy Urn.

DOCTORI THOMÆ TROTTER;
 CLASSIS REGIÆ MEDICO PRIMARIO;
 MULTA DE PATRIA BENE MERENTI;
 HOC MUNUSCULUM,
 PIGNUS OBSERVANTIÆ SUMMÆ,
 CHIRURGI NAVALES
 LUBENTISSIME OFFERUNT:
 ET PUBLICÆ SALUTIS, ET PRIVATÆ AMICITIÆ
 TESTIMONIUM SACRUM ESSE
 VOLUERE.

1802.

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Thos. Mant	-	Terrible.
Wm M'Donald	-	Royal George.
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D. M'Arthur	-	Belleisle.
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J. Booth

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— Hood - -	Glatton.
— Jervis - -	Indefatigable.
Dr. Thos. Kein - -	Queen.
Mr. M'Grath - -	Ruffel.
— Smith - -	
— Outram - -	Superb.
Will. Harris - -	
T. G. Ray - -	
P. Molliner - -	
— Milligan - -	Pompée.
W. Walker - -	Neptune.
Mr. Quin - -	La Loire.
Mr. M'Curdy - -	Prince George.
— Roe - -	Ardent. Prison Ship.
R. Carruthers - -	Malta.
Jno. Smith - -	Northumberland.
Jno. Landlefs - -	Powerful.
Jno. Bell - -	Pelican.
James Farquhar - -	Captain.

MEDICINA NAUTICA.

PROPOSALS to Lord ST. VINCENT for meliorating
the Establishment of Medical Officers.

THE following Letter was addressed to Admiral Earl St. Vincent, when he took his seat as First Lord of Admiralty; with a view of furnishing his Lordship with some connected statement of the medical establishment.

MY LORD,

Plymouth Dock,
Feb. 22, 1801.

The Gazette of the day having announced your Lordship's promotion to the First seat at the Board of Admiralty, I eagerly seize the pen once more in support of a cause that has long engaged my studies. Disappointed as I have been hitherto, I should expect redress from no other noble Lord assuming your office, and might on that account have declined to prosecute the inquiry farther. Your Lordship is therefore the only Peer from whom I can hope for ultimate success; for you must be better acquainted with the subject as a naval character and professional man, than any

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other

other minister. Should my representations be still in vain, I trust these Proposals will not be consigned to the deliberations of any inferior Board, or run the hazard of being sunk in the mud of the Thames with the other official lumber of Somerset House.

The Earl St. Vincent, of the third order of the Peerage, in the possession of all the honours of his profession, with a large fortune acquired by splendid services, now destined by the confidence of his Sovereign to wield the naval power of Great Britain, against the combined fleets of Europe, can have nothing left more gratifying to his wishes or to his ambition, than to furnish the sick-bed of a brave man with those comforts and attendance which, if they cannot always preserve life, at least cheer the passage to dissolution.

If I am unable to do justice to the task I have undertaken, my capacity ought to be blamed; my zeal will not be disputed; and I have seen, heard, conversed, and thought more on the subject, than has fallen to the share of any other medical character.

A Prince of the Blood, not more illustrious from his rank than for his humanity, himself a soldier, has procured such encouragement to the medical officers of the army, as far surpasses everything connected with the naval establishment. And very recent debates in the House of Commons testify how well disposed that Assembly is, to extend the bountiful provision of the Royal Commander in Chief to the militia surgeon*.

* See the speeches of Lord Castlereagh, Colonel Elford, and Mr. Sheridan, for providing half pay for militia surgeons. Session of 1800.

The question now turns ; are the physicians and surgeons of the navy to be still doomed to poverty and neglect, amidst such unanimous and generous national favours to the army*? No advocate within the walls of either House of Parliament has yet stood up to say, that the Physicians of the Royal Navy have no adequate establishment ; that one half of the navy surgeons have no half pay at all ; and that those who receive it, are scarcely allowed one half of the sum given to the army staff. Under such afflicting circumstances, and such apparent partiality, they must naturally look to an officer at the head of the Admiralty, who

* Nothing can more strongly exemplify the superior encouragement given to the army medical establishment over the navy, than the facility with which some superb hospitals have been reared during the late war at Gosport, Plymouth, &c. while to the navy, at three of its principal ports, to wit, Yarmouth, the Downs, and Torbay, a few mean buildings have been huddled up for the accommodation of the sick.

The army physicians are upwards of 60 in number, with a pay of from 3*l.* to 1*l.* *per diem* ; and half-pay unconditionally. There are four physicians on the navy list at 1*l.* *per diem* ; but have no half-pay. The surgeons on the army staff have 5*s.* half pay ; the regimental surgeon 3*s.* half-pay, and 5*s.* after five years' service. Of the navy surgeons, 20 have 5*s.* half-pay after nine years' service ; 100 have 3*s.* after seven years ; and 200 have 2*s.* 6*d.* after five years' service, which leaves between 360 and 400 without any half-pay.

It is not that I envy the army gentleman either their titles or establishment ; for I apprehend no money is equal to the drudgery they have encountered this war, in their professional duty : for not only disaster, but uncommon sickness, have followed our armies everywhere. But I have a right to feel for the reputation of the navy, committed by the deficient encouragement to medical officers, after a war crowned by victory and health.

The comparison is still more humiliating to the navy, when it is known that surgeons' mates of the army have 2*s.* 6*d.* *per diem* for half-pay. The interior of naval hospitals is also deficient in all that is essential and commodious to sickness, when compared with army arrangements.

knows their value, and can feel for their situation. If you, my Lord, should treat the cause with indifference it must be abandoned as desperate.

While the naval prowess of this country has confessedly, in the present day, transcended all its former greatness, it is nothing more than sound policy, to preserve by every means our exalted superiority. It has not been by a cultivation of the mathematical sciences that the nation has earned those laurels; those sciences, however they may contribute, they cannot secure the lasting possession of our naval power. Our greatness is solely due to the *unrivalled excellence in practical seamanship of our officers and seamen*. It is therefore the *vital part* of the machine that is our glory. No people on earth can wrest from us this prerogative; but disease may rob us of health; and a medical establishment, duly administered, can alone prescribe those means of prevention from sickness, which has often, and may again unnerve the naval arm.—Let not then, my Lord, the precious hours of your administration, at this momentous juncture, be wasted in viewing the models of visionary or plodding projectors, or in surveying the new mud-ponds of our dock-yards*; the *living powers* that put ships in motion are more worthy the attention of Earl St. Vincent.

Taking the surgeons on the navy list collectively, they may be justly compared to any other body of professional men; some very capable, and others perhaps not. There are many of the number ably qualified for the duties of the station;

* One of those clumsy fabrics had lately given way; where more money was sunk than would have preserved the health of the navy for ever: as if a warning to statesmen, not to expend on timber and stone, what might have secured the vigour of the living machine for ages.

liberally educated, and equal to the exercise of the art in any situation. But men thus duly informed cannot be thought to consider themselves bound to a department of public service, that affords them only a slender present support, and holds out no provision for the infirmities of age. Hence the best qualified surgeon will be the first to quit the navy when opportunity offers, and look to private life for the reward of his talents and industry. Poverty alone can confine him to a sea-life. I believe this fact is daily exemplified among us; and we are only surprised that it does not happen more frequently.

On a subject that has been so much discussed, I need not encroach on your Lordship's time by further arguments: that the naval medical establishment is every where defective, has been universally admitted; and your Lordship's experience and discernment must have long ago assured you of the truth of my assertion.

The provision made for the surgeon when employed has not been complained of; in that respect they might be satisfied, at least in the larger ships. But the manner in which these emoluments are levied on the service deserves immediate correction. By way of example I shall narrate the *items*, which collectively make up the pay of a third rate.

5l. per month personal pay	—	65l.
2d. per month for 600 men	—	65l.
5l. per 100 in lieu of venereal fines		30l.
Free gift, as called	—	43l.
Commutation for servant	—	11l.
Total—		214l.

Out of this sum the surgeon is to provide himself with instruments and part of the medicines: I say a part, because a gratuitous supply, at the discretion of the Sick and Hurt Board, has been allowed by government for some years past. We thus observe, that the emoluments when in actual service are not unequal; unless a sickly condition of the ship happens, for which no provision is made. But it would appear much more like a systematic mode of conducting service to condense all these items into personal pay at a fixed sum *per diem*. I will exhibit a form with that view, under certain limitations, as near as is consistent with the present emoluments; and then a form of half-pay, with proper restrictions; the whole to be followed up with an establishment for supplying instruments, medicines, necessaries, and every kind of stores connected with the medical department at government expence.

PROPOSALS for Surgeons' full Pay.

First Rate, 15s. *per diem*. — No surgeon shall be eligible to a first rate, till he shall have served seven years; in which shall be included two years' service as mate.

Second Rate, 13s. *per diem*. — Qualification, six years' service, including two as mate.

Third Rate, 11s. — Qualification, five years, including two as mate.

N. B. The commutation of servant's pay is to continue to every surgeon.

Fourth Rate, 9s. 6d. — Four years, including two as mate.

Fifth

Fifth Rate, 8s.—Three years, including two as mate.

Smaller vessels, 7s.—Two years as mate.

FORM of Half-pay.

200 Surgeons, 5s. *per diem*, after ten years actual service, which shall include three years of mate's time.

200 ditto, 4s. *per diem*. after eight years' service, which shall include two years of mate.

The remainder of the list, 3s. *per diem*, after six years' service, which shall include two years as mate.

Every surgeon, after eighteen years of actual service, which shall include four years as mate, shall be entitled to retirement, on the half-pay he may then enjoy from his rank. This seems the more reasonable, as no man can be deemed equal to perform operations in surgery at sea after forty-six; when the eye-sight begins to fail naturally, and when the muscular power that gives steadiness to the hand of the operator also declines. But before surgeons, according to the routine of duty, could complete this number of years, they must be upwards of fifty years of age; and therefore the present forms of superannuation are entirely superfluous.

The full pay shall be paid every three months, three months being reserved in case of default of stores: the half-pay to be paid as in the present form.

I am also of opinion, that mates ought to be paid every three months by bill. The present method of payment to these gentlemen is a grievous

vous hardship: and few young men, after an expensive education, can afford to support themselves till the ship is paid; sometimes not for many years when employed on a foreign station.

It is one of those singular but odious customs, which we often meet with in old establishments, that a private individual should furnish, out of his emoluments of pay, the articles wanted for public service. Such is the ancient rule in the navy, that the surgeon must provide medicine and instruments. It opens a temptation for withholding comforts from the sick-bed, that in many situations may affect life; and the virtue of no human being ought ever to be put to the test. Such a reflection as this offers, supersedes the use of further arguments: Government ought therefore to supply every article that comes within the description of medical stores. In order to connect this business with naval forms, and to expedite service, I propose that dispensaries, or storehouses, shall be opened at the naval sea-ports, to supply ships with these articles when wanted; to be demanded by the surgeon, under the authority of his captain, in the usual manner. Four general dispensaries would be required for this business, under the direction of a surgeon who has served ten years in the navy, with a salary of 200*l. per ann.* and house-rent. These dispensaries shall be at London, Chatham, Portsmouth and Plymouth. Ships on foreign stations shall be supplied at all places where naval stores are kept, under the care of a mate or surgeon of the list, with a suitable salary. The whole shall be duly furnished with clerks and porters. Necessaries for the sick, as at present in use, shall be demanded *only* when wanted. The directors of the dispensaries shall be sworn into office; and the surgeons shall take an oath annually,

nually, when passing accounts, that no unnecessary waste may be committed *.

The Commissioners of Sick and Hurt, shall order the dispensaries to be duly furnished with all species of stores for the exigences of service.

The medical establishment being thus completed, and suitable encouragement given, government will have a right to prescribe forms of study for naval surgeons, which can alone secure persons duly qualified for the office. A term of study, which comprizes in two years two courses of lectures, on anatomy and surgery, medicine and chemistry, with at least six months' attendance at

* During the war, the *gratuitous* medicines have been supplied to the fleet from the shop of a common druggist in Plymouth Dock. No survey, no check or scrutiny on the part of service were directed; in this manner they were sent on board; and there is scarce a surgeon that did not complain of the quality, and many who found the weight very deficient. The globules of quicksilver in the *Ung. Hydrarg.* were sometimes found as large as sparrow shot. What man can have effrontery enough to justify such a mode of service? A carpenter may as well go and buy a mainmast for the Royal George at a joiner's shop!

I have often known ships ordered to sea in a hurry, when a set of instruments could not be procured on any terms. I even remember a ship of the line joining the fleet without instruments; and when in sight of the French fleet the surgeon came to the hospital ship to be supplied. The captain of this ship informed me, after the action, that if the crew had known that no surgical instruments were on board, he doubted whether they would have carried the ship into battle. It is an unpardonable defect, that articles of such importance should be left to so much uncertainty. In one instance of this kind, the Port Admiral could not give an order for the surgeon of another ship in dock, to give up his instruments, because they were *private property*!

If matters are thus so badly arranged at home, they must have been still worse on distant stations. In the sickly condition of some ships in the West Indies, the subject is too distressing to resist upon. In the East Indies, from Mr. Nagle's account, service seems to have been left to itself in the whole arrangements of medicine.

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some reputable public hospital, would be requisite; exclusive of the usual apprenticeship as apothecary, which shall not be less than two years. Undeniable certificates shall be produced of these forms of education, for every one who is candidate for a surgeon's warrant. Mates of the second class and under may be admitted on easier terms*.

PHYSICIANS.

I would recommend an increase of pay to the physicians, at the following rate, to give them also the same encouragement as those of the army.

To the physician of the fleet serving under the Union Flag, 2*l.* *per diem*, and 1*l.* for half-pay.

To a physician of a Squadron of twenty ships of the line, 1*l.* 10*s.* *per diem*, and 15*s.* half-pay.

To physicians of squadrons, 1*l.* *per diem*, and 10*s.* half-pay.

* It may be observed here, that I depend very little on any method of examination for the qualification of surgeons; at best they are uncertain. The half informed candidate may even be sometimes preferred to the more intelligent student. A modest and diffident young man, though master of his profession, may be so embarrassed under examination, as to appear ignorant, while the more forward may gain credit for wisdom he does not possess. But the questions used in passing are often learned by rote; while a good education gives a more certain security for abilities. A knowledge of anatomy can only be learned by dissection of the body: operative surgery cannot be acquired from books; chemistry must be taught by process and experiment; and clinical medicine can only be known by seeing the sick treated. If a young surgeon goes on board without having acquired knowledge in this manner, to what a fate may our officers and seamen be exposed! No sick man in public service ought to have so little security, for an able medical attendant, as the forms at present supply.

No surgeon shall be promoted to the rank of physician under five years' service as surgeon and mate; and their degrees as Doctors of Medicine shall be obtained in a regular manner from the Universities where they have studied the usual terms*.

HOSPITALS

Are so intimately connected with naval service, that an arrangement similar to what takes place in other departments, with similar restrictions, is also necessary in these; that they may be filled with persons fully qualified, and to be taken from the navy list on the same terms as physicians to fleets and squadrons.

Physicians 1*l. per diem*, and

Surgeons 15*s. per diem*; to be paid without deductions. They ought to be lodged in houses

* Physicians holding naval appointments who have received the degree of Doctor in Medicine in a regular form, from the University where they studied:

Year.	Appointment.	Inaugural Dissertation.
1755.	{ Dr. WILLIAM FARR, Royal Hospital, Ply- mouth.	{ De Usu Mathematicæ et Philosophiæ Naturalis in Medicinæ Studio. Edinburgh.
1765.	{ Dr. ROBERT ROBERT- SON. Royal Hospital, Green- wich.	{ De Scorbuto. Edinburgh.
1788.	{ Dr. THOMAS TROT- TER, Physician of the Fleet.	{ De Ebrietate, ejusque Ef- fectibus in Corpus Hu- manum. Edinburgh.

All the others, including the whole Commissioners of Sick and Hurt, have been obtained by *proxy* elsewhere!—Such is the state of MEDICAL HONOURS in the ROYAL NAVY OF GREAT BRITAIN, at the close of a nine years' war, and at the beginning of the nineteenth century!!!

within the walls; and the private exercise of the profession *totally, not partially*, abolished.

All the assistants of these hospitals ought also to be lodged within the walls, with suitable apartments, and allowed the house provisions. At present they live at a distance, and many of them keep shop. These gentlemen ought to have served as mates, at least one year on board, before they can be appointed; from the hospitals they might then be eligible to promotion as surgeons of ships. This form of duty would tend to improve their surgical knowledge, which, in the end, must make them more valuable to service. Assistants to hospitals, under these regulations, might be considered as candidates for promotion, and the commissioners of Sick and Hurt would thus have surgeons on the spot, always ready to fill vacancies on emergency.

(The next paragraph not being connected with this subject, I have therefore suppressed it.)

Having thus proposed an eligible plan of encouragement, that would bring the navy near to the army in its medical pay, I apprehend, in the present condition of the list, Government would have a right to exact some adequate return and security for its bounty. There are many surgeons, I am aware, who have received no education beyond a provincial town: from such, I think it would be but fair to withhold this remuneration of half-pay, till they have gone through the course of medical studies prescribed above. I mean no less than that they should return to school to complete their education. Government would by these terms improve the whole *corps*. I would even at present
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sent recommend, that government should demand from the surgeons such certificates of education as they can now produce, that the subject might be viewed in its proper light, and the abilities of the list fairly balanced. Such a scrutiny might perhaps be attended with some unpleasing discoveries; but it is only just that the service should know how to place dependence. There is nothing where the confidence of mankind is so easily duped or misled, as in the profession of physic; where flattery is too often substituted for talent; evasion for explanation; and a grave exterior deportment assumed to conceal a weak and uninformed mind.

But there are other changes as much to be wished as those now mentioned. It would be well to transfer the patronage of the surgeon's list to the Admiralty. Your Lordship has seen some occurrences in the channel fleet that strongly speak for this alteration. Physicians ought to have nothing more to do with these appointments, beyond a recommendation, when they meet with a meritorious officer. The habits of professional men render them very unfit for this species of official duty: let them be confined to their medical studies; make their salaries sufficient, and debar them from *private fees*; you may then expect that due attendance can be enforced in hospitals and every where else; but example will be the more dangerous if it begins at the head of the department*.

I would

* Nothing can be more indecent than a member of a Public Board traversing the metropolis in the private exercise of his profession. A physician in private practice must be punctual in his visits, otherwise another may be called in; and thus his thoughts are turned from a sickly fleet or army. But it appears to me that the man who decoys a Commissioner of Sick
and

I would also recommend two inspectors of health, to correspond with the Admiralty only; to be constantly in motion, and to inspect all hospitals, guardships, slop-ships, convalescent ships, prisons, and prison-ships, ships fitted for carrying troops, tenders, and all the private sick quarters over Great Britain and Ireland. They should watch and regulate the internal economy of health in all these, and make occasional representations to their Lordships. Owing to the want of a qualified medical officer for this duty, such numerous and dangerous diseases have been generated in tenders and guardships, as to threaten at different times the health of the whole navy.

Government, on some occasions, have been obliged to prosecute surgeons, who are contractors for private sick quarters; for the most inordinate extortion. These are appendages to the navy that Commissioners for Sick and Hurt have never been in the practice of viewing.

and Hurt, a physician of a fleet or naval hospital, to give advice for a guinea, is guilty of something that approaches near to bribery; and liable to prosecution. If a member of the army medical board, on visiting a private patient, should cast his eyes on a news-paper lying in the sick chamber and read the following paragraph, would he not blush? London, Jan. 6th, 1801, "We are sorry to hear that the yellow fever is again making great ravages at Martinique; the 68th regiment, in *two months*, has lost 660 privates, and 25 officers."——I highly regard the professional talents of all these gentlemen of both boards, and it grieves me to the heart that they should by any means be drawn from public service: it is the custom that I reprobate, not the individual:

In the event of a future war, I would recommend Government to station the two medical boards at Blackheath; that their deliberations on the health of our fleets and armies may never be suspended by the temptation of a fee: there they would learn self-denial,

From

From the out-ports, tenders have come with new-raised men to man our ships, where I have known such abuses, as well on health as on other matters, as surpass all belief. I have known a guardship having for months together near two thousand men on board; a grave to health, as well as to order and discipline!—In short, the medical arrangements seem still in infancy.

The sketch I have now the honour of laying before your lordship, can only be called an *outline*: the minutiae must be completed afterwards. But it is in vain to think of improving the department, or to fill it with respectable abilities, till the abuses are corrected from the foundation. The whole fabric must be built anew. It is meant in this plan to combine the welfare of public service with the interest of the individual. It is supposed to be calculated to excite emulation and activity throughout the different gradations of rank: and to assure the surgeon, that in proportion to the fair and manly exertion of his talents, his chance of promotion is increased; and in proportion to his length of service his emoluments become greater. This applies to the mate as well as the surgeon; for it can only be by a progressive encouragement, that any gentleman liberally educated in the medical profession could attach himself for a single hour to the station of a surgeon's mate in a sea-life*.

T. TROTTER.

* It is not in every situation of service that a surgeon's mate has it in his power to distinguish himself: but among wounded men, after an action, or in a sickly condition of a ship, activity, talents, and humanity certainly become conspicuous. The navy, hitherto, has been unfavourable to the reward of medical abilities; there is little probability of it being soon

June 30, 1802. Just as this work was going to the press, the news-papers give the account of some additional half-pay to naval officers. But it does not appear that a single word has been said of physicians, surgeons, or surgeons' mates. We are indeed an unfriended part of the community! Mr. Addington, himself the son of a physician, even speaks of the surgeons to look for bread from the merchant-service, as merchant ships are now to carry surgeons. But surely the nation ought to reward its own servants. Let me bring the business a little nearer to the Minister's feelings. Would

otherwise. Amidst the other valuable precedents which took place after the first of JUNE 1794, was Earl Howe's attention to the first mates of all ships of the line; who were immediately promoted, as they completed the limited time of two years' servitude. Much as this generosity was applauded, it has not been imitated by other commanders in chief in the succeeding general battles, that covered our navy with additional glory, and gave promotion to all other classes of officers.

The following circumstances, however justly they impeach medical arrangements in the naval department, are so honourable to the character of the profession, that I cannot forbear mentioning them.

In October 1799, Mr. Duke, surgeon's mate of the *Quebec*, then at Providence, was appointed surgeon of the *Fox* schooner, which was about to carry the Indian General Bowles to North America. Neither medicines or instruments could be procured. The *Fox* was wrecked on the Bahama Islands twelve days afterwards, and the crew were great sufferers. One man had a dreadful ulcer on the ankle; which daily grew worse, and the patient had no prospects of life but from amputation. But there were no surgical instruments. Mr. Duke therefore resolved on taking off the limb with a small knife and a joiner's saw. He succeeded; the patient recovered, after undergoing all the hardships of famine. Mr. Kein, surgeon of the *Queen*, took care to state this case to Sir H. Parker, and Mr. Duke was appointed surgeon to the *Sprightly*. The attention of the surgeon to his patient was so great, that he had often to shoot birds in the woods for his subsistence!

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this accomplished Statesman, the conciliator of party, unassuming as he is at the head of the Treasury, would he like to quit his present office, to be made a collector of the customs at Newcastle or Hull? The change hinted at would be as sad a reverse to the navy surgeon. Gentlemen who have expended a small patrimony on the study of their profession, without half-pay must be left destitute. I speak from experience at the end of the former war. The sensibility which accompanies the professional character, must be deeply wounded by this neglect. In the duties of our station we become inmates with our officers; we mix in their friendships, and share in their confidence. We attend them in the hour of bodily affliction, when their inmost secrets, their dearest concerns are intrusted to us; and they often expire in our arms. This frequent communication learns us to partake of their heroism, and we grow jealous of every thing that detracts from the naval reputation of the country.

One of the great comforts attending my labours, has been the thought of these Volumes being considered as so many vouchers in favour of the medical officers, during the glorious achievements of the navy. No London physician has told in the circle of his acquaintance, that "*he has seen us shuddering at the threshold of contagion, and feeling the pulses of our patients by proxy,*" as Dr. B—g—n, formerly assistant to a prison hospital relates of a certain fumigating adventurer. We have preferred no exorbitant claims on the bounty of the country: why then withhold encouragement equal to the army medical establishment. *Ruat cælum, fiat justitia!*

MEDICINA NAUTICA.

OCCURRENCES *relating to* HEALTH *in the*
Fleet.

1799.

IN January, a squadron of seven sail of the line was ordered to sea, under the command of V. A. Sir Charles Thompson. These ships encountered much bad weather, but with little effect on Health.

On the 6th of this month, a child on board the Queen Charlotte was brought by its mother to Mr. Burd the surgeon, for some spots on its body, which at first sight were pronounced to be small-pox. The child was immediately sent out of the ship; the disease turned out to be confluent, and the patient died. Between the 6th and 16th three other children were ordered on shore in small-pox.

The effluvia which propagate the variolous disease, being so plentifully exhaled from a large crop of pustules, we need not be surprized that it should spread rapidly. The eruptions on the first child must have been somewhat advanced, as they were at once distinguished to be variolous; at least, beyond the third day, which is the last period we

can

can fix for security against infection. These cases terminated the progress of the disease in the Queen Charlotte.—Amidst other regulations of Health, would it not be a good plan to inspect every child that comes on board; for this is a very frequent conveyance of small-pox contagion?

Previous to leaving port, Sir Charles Thompson had complained of slight febrile symptoms, and sore throat, but which were not considered beyond a common cold. He exerted himself much while at sea during bad weather; the feverish indisposition increased, and was followed with great loss of strength. At the time he returned to port, anasarcaous swellings, with symptoms of general dropsy appeared, which were relieved by æther, opiates, and squills. After this he sunk into a comatose state for some days, and died without a struggle in the month of March, at Fareham.

In Vice-Admiral Sir Charles Thompson, the naval service of the country lost a valuable officer, and society a man of the first integrity and worth. But other tributes are due to his memory from the physician of the fleet; and whoever giveth to a poor disciple, is certain of remembrance in our ALBUM. I had been surgeon with him in two ships, in one of which a general sickness prevailed. This is an occasion that tries the man and the officer: if the heart is good it here finds exercise for some of its virtues; for surely nothing can be more distressing than the helpless condition of a number of sick men in a ship. The service, I lament to say, still denies many comforts; which, if the benevolent and charitable officer does not

afford from his private stores, they are not within the command of the surgeon. Sir C. Thompson exemplified this charity on that occasion, and on all others, with the most extensive liberality. The sick were usually helped from his table, before any of his guests partook; and medicine produced its genuine effects, because it was assisted by all the restorative and exhilarating powers of diet.—If the reader of this paragraph should be an officer, who has accumulated a fortune, by the hardy exertions of brave men under his command, and has never extended a kind look, or an article of comfort to the shivering tenants of the Sick Berth, let him think of Sir Charles Thompson; “go, and do thou likewise.”

April. My station on board the *Atlas* not affording me opportunities to visit the sick as heretofore, or to communicate with the surgeons, I considered myself now rather as the register of their afflictions, than as the physician who ought to relieve them. This thought was transmitted where it was sure of being candidly treated: but my retirement was not deemed expedient.

At this season I suggested that I could be much more usefully employed at the port of Plymouth, to inspect the health of the ships as they now refitted there. This was approved of; for, I believe, some persons were glad to get quit of me on any terms.

May 7th, I visited the *Saturn* of 74 guns, in Cawsand bay. This ship arrived in port on the 16th of April, from a six weeks cruize, during which time twenty-seven severe cases of typhus appeared; of which one man addicted to intoxication

ation died. The others had either recovered, or were convalescent, when the Saturn came to port. The weather was cold for the season, with sharp easterly winds.

The fever was not yet subdued; from her arrival to the date of my visit fifty-nine had been sent to the hospital. Nineteen were seized on the 6th, and forty-five on the 7th.—Mr. Johnstone could not trace this fever to any imported infection: indeed there was no reason for conjuring up foreign causes, there were enough on the spot. (Vide Mr. Johnstone's Report, Art. Contagion.)

Sickness at stomach, and a peculiar pain of the abdomen, were common attendants of this disease: but neither diarrhœa, dysenteric symptoms, or constipation were observed.

A fair trial was at this time made, of Dr. J. C. Smyth's nitrous fumigation, which was entered upon with much belief of its ante-typhoid powers. This was continued in both the Sick Berth and lower deck to the 7th of May; its inefficacy was then thought to be proved, as forty-five people had complained the last twenty four hours. At this time I directed that it should be discontinued. The cases, though numerous, were not remarkably severe; and had the ship not been in great confusion, by sitting out in a great hurry, many might have been kept on board for cure.

May 12th. No fresh cases appear of any consequence. From this period the disease was considered as subdued.

The people of the Saturn not being remarkable for cleanliness, suggested to me the necessity of having their bedding scoured at the hospital, as well as their cloathing. I therefore desired the Captain to insist upon it being done before his men returned on board. This was complied with;

and for the *first time*, were infected blankets of seamen submitted to the purification of soap and water at a naval hospital. Who would suspect, that habits so unfavourable to health should exist in an hospital establishment; and at a time when most of our ships hold up such examples of cleanliness!—yet the expence of scouring a blanket only was three-pence.

May 26th. On this day the French fleet is said to have sailed from Brest; and though so near as to be discerned by the Impetueux, one of the headmost ships, our fleet could not bring them to action.

June 13th. Lord Bridport came to Cawsand Bay with five sail of the line; having dispatched sixteen sail of the line to the Mediterranean under Sir A. Gardner.

During this cruize, pulmonic and catarrhal complaints, with rheumatism, had been very frequent and obstinate. Some of these cases required very large bleedings, larger indeed than is usually done with seamen; but the ships had not lately encountered much severe sea-duty, and had been well refreshed with meat and vegetables. The weather was cold for the season, and the wind blowing chiefly from the eastward.

The Achille, Captain George Murray, suffered considerably from scurvy, being a new ship, with a number of raw land-men on board.—On this occasion the lemon juice, as supplied in cases from the Sick and Hurt Office, required a large quantity to be given to effect the cure; and was probably either spoiled by age, adulterated by acetous acid, or diluted with water.

July 11th. Arrived the Mars, Ajax, and Ramilies. These ships had been from ten to fourteen weeks at sea, and scurvy had become general in
all

all of them; which was quickly corrected by the vegetable supplies. Complaints of the lemon juice were also made by these surgeons. A few bottles in each chest are observed to be muddy from pulp and mucilage, instead of being defœcated and pure.

July 13th. Arrived Sir A. Gardner with three sail of the line, and five of Lord Nelson's prizes, last from the Tagus.

August 14th. The *Renown*, Captain Bertie, came to Cawland Bay, having been fourteen weeks off Rochfort, with a blockading squadron: few of her men were without symptoms of scurvy, being a raw ship's company.

The weather, since the month of January, had been severe and cold, with a great proportion of easterly winds; scurvy was more general in the channel than had been known since the rigid winter of 1794-5; but all the cures *were managed* on board.

August. Although we have ceased to note the whole instances which have lately occurred of small-pox being imported, the following is worthy of record. Mr. Allen of the *Ramillies*, in a late report, mentions a man who died of this disease at the hospital, and gave this account of his being infected: "He was coxswain to a boat, and was
" desired by one of the young gentlemen to call
" at a house in dock for a parcel of boots. On
" entering the room where there was a child in
" small-pox, far advanced in the disease, he re-
" collected in a moment that he never had the
" infection; ran out of the room and waited in
" the street until the parcel was brought out to
" him. A few days after this he was taken ill.
" He was sent on shore the day after the eruption
" appeared. We were fortunate in getting clear
" of

“ of the contagion; and confirms me in your
“ opinion, *that the disease is not contagious at so*
“ *early a stage.* One of his messmates was very
“ attentive to him on board, never had the small-
“ pox, yet he escaped by this timely separation as
“ well as others.”

August 5th. This day died, Admiral Richard Earl Howe, K. G. in the seventy-third year of his age: The Father of the Fleet, and the darling of British seamen.

His Lordship had never recovered the use of his limbs, from the severe shock he experienced in Torbay in Feb. 1795.—Public opinion has already consecrated the name of this illustrious naval officer; but what pen shall do justice to those private virtues, that were only known to a small circle: Loyalty, that shunned the ostentation of temporizing politics; integrity, that the emoluments of office could never corrupt; independence, that the power and patronage of station could not bend; humanity, that was extended to the lowest under his command; a deportment so humble, so mild, so unassuming, that it appeared most conspicuous in the hour of victory: to these qualities were added, a piety, in the observance of religious duties, that gave lustre to rank, and marked the possessor as an example worthy of the British Peerage; as a model for the conversion of the modern Great. Of all men that ever I conversed with, read or heard of, I know of none who seemed more fit to die than Earl Howe.

May this country have a race of naval heroes to imitate his virtues!

August

August 8th. The combined fleets of France and Spain having escaped from the Mediterranean, the Channel fleet was ordered to assemble again in Torbay. About this time Lord Keith's fleet of thirty-one sail of the line returned from the Straits, having chased the enemy's fleet into Brest road. A larger number of ships now extended the sphere of our observations, which we shall faithfully detail.

Upon inquiry of the different surgeons, I find that the ships which went to the Mediterranean were less afflicted with scurvy than those which remained in the Channel, although they left port at the same time. Of such considerable effect is climate, in accelerating or retarding the approach of scurvy when salted provision is the diet: the scurvy indeed is to be considered as the *constant epidemic* of the Channel.

A Letter from Mr. Burd of the Barfluer, off Brest, dated the 15th of August, makes the following remark: "We will require a large proportion of vegetables when we come in; several scorbutic cases have appeared within these few days; I imagine in consequence of the change of weather, which has been raw and cold, with drizzling rains; and in the Mediterranean we had it very dry and scorching. I was well aware we had many predisposed to the disease, (as they have had little fresh vegetables for some time past,) and only required an exciting cause, which, no doubt, damp, cold weather may be reckoned; particularly to constitutions assimilated to a warm and mild temperature."

September 26th. Arrived the Uranie, Captain Towry, having left the fleet at sea, on account of a general fever in the ship. Of this disease two died before coming to port, and twenty-two have

have been landed. Some of these in a dangerous state.

October 5th. To this date, in addition to the number mentioned above, the *Uranie* has sent eighteen patients in typhus, but is now considered safe.

It does not appear that any imported contagion has been suspected as the cause of this fever; but it has evidently been aggravated much by bad weather*.

October 6th. Arrived the Captain Sir R. Strahan Bart. from Torbay, having a typhus on board. This ship had just arrived from sea with a squadron under the command of Sir J. B. Warren; had experienced much bad weather, and was leaky in the upper-works. One man died on board the third day of the fever, and some of those landed at the hospital are in considerable danger; but many with slight symptoms, from which I infer that the contagion is on the decline.

No imported contagion has been suspected here; but that the fever is of that nature is evident from the persons first taken ill, who were living together; and after them, the attendants of the Sick Berth, and a lad who attended his messmate. Early separation, and perfect cleanliness, with pure air, seem to have checked the disease in due time. Eighty cases were sent on shore; and on the 28th of the month the Captain was deemed fit for sea.

The orlop deck of this ship is admirably fitted to prevent the accumulation of impure air, a free circulation being given round the store-rooms, which are kept in the highest order possible. The decks above exhibit the same attention on the part of the officers.

* (*Vide* Mr. Perkins' Report, Art. Contagion.)

With a view to keep a check upon the filthy bed-houses of the hospital, the officers of the Captain and Uranie were reminded of making application to have the bedding of their seamen scoured; and when Mr. Farquhar went by the orders of Sir R. Strahan, he was informed that it was a great expence! so reluctantly has this most salutary process been entered upon; yet blankets were scoured for sixpence per pair.—On visiting the Captain's people the third day after they were landed, in one of the wards of the south-east wing, I found eleven patients without sheets to their beds; and on enquiring the cause at the nurse, I was informed that the matron was getting them ready *as fast as possible*. At this time the hospital was rather more than one third full!!!

November. The Malignant Ulcer has again made its appearance among us, and the Temeraire of 98 guns has suffered considerably. The character given by Mr. Lloyd the surgeon entirely corresponds with the former accounts: its progress was equally rapid; and the cure as difficult as on former occasions. He sent a number of the worst cases to Haslar and Plymouth hospitals; but his Sick Berth was quickly replenished with similar sores. The nitrous fumigations were here practised, but with no other effect than as usual neutralizing the smell. I cannot help reprobating every attempt of destroying bad smells by this or any other mock-heroic placebo; for it serves to encourage indolence, in washing the bed-clothes, &c., and removing the filthy dressings of putrid sores; and hence the constant accumulation of every thing that is nasty in such apartments. But if even this is to be obtained, the pipkins must be kept constantly fuming, to the destruction of a
great

great quantity of salt-petre, *quo graves Persæ melius perirent.*

The treatment of this ulcer does not accord with the description given; for we are convinced that in its first stage it is highly inflammatory in its nature. There were twenty cases in the list when Mr. Lloyd left the *Temeraire*, all of whom recovered under the attentive and scientific treatment of Mr. Burd who succeeded; some of these with large exfoliations of bones.

The sick of the fleet suffered severely from having no hospital-ship during the winter months. Those that were sent on shore at Torbay, were frequently carried to Dartmouth, five miles distance, in open carts, there being no hospital at Brixham. Others were sent to Haslar or Plymouth in different ships, under circumstances that are totally repugnant to our ideas of service. But our voice and opinions could now command no attention. The surgeons, at this time, found the common diet on board extremely defective; and in most of the ships, had it not been for the charity of the officers in bestowing on the sick fresh meat and broth, many of the convalescents must have sunk under their debilitated state.

The British and Russian troops that landed in Holland in August last, being obliged to quit that country, embarked in November, after suffering incredible hardships. Among the Russians in particular, fevers became general, which were followed with great mortality.

The summer and autumn of this year were remarkable for the quantity of rain that fell; inso-much that very little corn was saved, and a scarcity next to famine was the consequence.

1800.

About the beginning of February the Edgar came into Cawfand Bay, with sixty sick on board; having left the fleet off Ushant. According to Mr. Fuller's account, a fever made its appearance about the middle of December, and had gradually spread to the present time. No imported contagion was duly authenticated; the fever was supposed to be of an inflammatory nature; large bleedings were practised in some cases; but in others large quantities of wine were given, apparently on very vague and superficial indications.

The weather, as might be expected from the season, was inclement, and the ship leaked much in the upper works, the people being constantly wet. The cases which I examined, clearly exhibited the typhoid type of fever; and instances were found that distinctly marked its contagious disposition. To this period six men had died.

Mr. Fuller adds the following remark on the Nitrous Fumigation: " Dr. J. C. Smyth's fumigation with the *nitrous gas* was repeatedly made use of in the Sick Berth; but was so offensive to the sick, that it could only be breathed a few minutes. It has also been carried into its full extent; in the decks, and by persons who had good lungs, it was borne, with the tarpaulins over the hatch-ways, from eleven pipkins continually throwing up a large vapour for two hours."

Before this fever was subdued, one hundred and twenty-one patients were sent from the Edgar to the hospital. I examined the few who returned; and found that all the dirty clothes in their bags remained as when sent on shore! Such was the

state of Plymouth hospital in March 1800—what a recompense for my trouble!

The most pleasing part of this narrative was the charitable attention of Captain Buller to the sick and convalescents; many of whom, in a rigorous season, must have perished but for the large supplies from his stock of fresh meat, &c. while he lived on ship's fare himself.

During these months a fever of the typhoid kind also made its appearance, and extended to nearly twenty cases on board the Royal Sovereign, the flag ship of Sir A. Gardner Bart. The first case soon discovered its nature to Dr. Browne, who took due precautions to prevent its progress; which was no difficult matter, under the fine arrangements of that highly ordered ship.

March 28th. Arrived in Cawland Bay, the *Pompée* having on board seventy cases of fever. This disease appeared about the beginning of the month, but no satisfactory account could be obtained of its origin. Like that on board the *Edgar*, it was supposed of an inflammatory nature, because coughs and stitches resembling pleurisy were common, and some of the patients seem to have sunk under the use of the lancet: eight died previous to this period, and six or seven at the hospital; near two hundred were landed before the disease could be said to be fairly extinguished.

A large proportion of the cases sent from the hospital suffered relapses, seemingly from the want of a grateful, nourishing, and stimulant diet, during convalescence. Some of these were sent back; but the disposition to relapse became so general, that latterly they were kept on board. A large defection of the *Pompée's* company happened on this occasion, partly from a dislike the men had to
return

return to their ship, and partly from the facility with which they were entered as objects to be surveyed at the hospital.

A very interesting circumstance took place on the 20th of May, at a general survey at the royal hospital, Plymouth, where I judged it proper to attend, on account of a large number of the Edgar and Pompee's people being on the list for invaliding. These men had been sent on shore for fever; were now recovered, or convalescent; and brought forward for other complaints, or old hurts that never had been known to the surgeons of the respective ships.

On entering the public room, I was accosted by Captain Creyke the governor, with his usual acuteness, and was asked by what authority I appeared there. To this I replied, the station I had the honour to hold. This was not deemed sufficient; he said he could only admit me by an Admiralty order. I then remarked, that the order for survey from the Port Admiral was addressed to Captains Stirling, Sawyer, and Pater, who were my officers, and to their opinions I would only submit. The captains very handsomely accepted of my attendance, as they knew I only came there with a view of benefit to service; and as they considered it their duty to obtain every evidence that could save a single man from being invalided on false pretences*. A general survey at an hospital has
always

* Some time before this rencounter with the governor, in visiting some of the wards, I had dropped some angry expressions about bitters being put into the wine; which were artfully construed into interference with the medical practice.—Remonstrances were immediately made to the Admiralty, seconded by the Board of Sick and Hurt; and their Lordships thought proper to restrict my visits. To this I made no reply, as I expected no support from Lord Bridport. Trusting to this

always been considered as a public day; and even on this occasion every surgeon of the fleet was present. An Admiralty order directed my future attendance at all surveys afterwards.

April 23d.—Arrived the *Ruffel* from Torbay, having a typhus fever on board.—This contagion was distinctly traced to a man sent from Plymouth hospital, who brought with him his clothes in as dirty a condition as he had carried them on shore. [See the able account of the surgeon, under the article Typhus.]

April 24th.—This day the captains of the fleet received Admiralty orders to put themselves under the command of Admiral Earl St. Vincent.

May 8th.—I transmitted the account of the sickness on board the *Centaur*, as established by Captain Markham, to the Admiralty; and enforced the utility of its general practice throughout the navy, by all the arguments I could produce, as my last attempt to secure a comfortable diet for the sick on board.—(Vide the article Diet.)—Mr. Nepean, in return, informed me that he had laid this letter before their Lordships.

At this time, and for eight weeks past, there has appeared a general disposition to typhus fever

order of the Admiralty, the governor thought he was empowered to exclude me from the hospital altogether. The captains present asserted their own authority, and the service triumphed. This business diffused general satisfaction throughout the fleet. This volume contains facts sufficient to justify a watchful eye over hospital establishments. The future surveys are reported to have been rather meliorated from my attendance. But on this occasion, had my opinion been taken, the whole of the *Edgar's* and *Pompee's* people should have been remanded to their ships, without a single question being asked.

in

in most ships of the fleet. In some it has certainly been distinctly traced to an imported contagion; but in others we could obtain no evidence that it originated from an infected subject labouring under actual fever when he came on board. Draughts of raw landmen are frequently sent from the guardships to fill the deficiencies of complement; and we can often, without doubt, mark the first movement of infection; and as this so frequently occurs, there is much room left for the suspicion, that in nineteen out of twenty instances of general fever, in ships, they ought to be traced to this origin.

The tenders employed on the impress service, are a constant source of infection. We have had many occasions of old, to reprobate the mode of carrying on this duty. But our representations and arguments in this, as well as on many other departments, have been little attended to. The indolence and torpor of office are not to be roused by common means: it requires a whirlwind or a pestilence to shake and frighten it from security.

Captain Kean, of the Chapman armed ship, lately brought to Plymouth the supernumeraries belonging to a tender which he found in one of the small ports on the Welch coast, all of whom were labouring under a severe typhus fever. Their condition, as related to me by this officer, who hazarded his own life in the exercise of his humanity, is beyond description, and too disgraceful to be inserted here. Another occurrence, where infection was generated by causes nearly similar, was in the *Actæon* 44, a guardship at Liverpool. The *Seagull* and *Reynard*, sloops of war, were sent to bring the new-raised men to Plymouth. A malignant fever appeared among them, which spread through the whole, and extended to the

ships' companies of both sloops, which made them send two-thirds of their crews on shore. The *Actæon*, it appears, was furnished with what is called a *Press Room*, as in the impress tenders, for security, where, it is said, these unfortunate victims of contagion were kept.

When we view such occurrences as these in service, where raw men are drawn, to be mixed with others, is it not something more than presumptive evidence, that contagion is always imported into our ships? This too is strongly supported by the perfect cleanliness in the ship itself, as well as cleanliness of person in the seamen, and pure ventilation throughout the decks. It is a most difficult business sometimes to scrutinize the origin of fever; but we have so often succeeded, where common observers, less acquainted, have failed, that we remain strongly impressed with the opinion of the general importation of infection. How otherwise could we explain it in such well-appointed ships, as the *Royal George*, *Royal Sovereign*, *Achilles*, *Impetueux*, *Russel*, *Cæsar*, &c.

This general disposition to typhus, might owe much of its force to peculiarities of season; and for these we are to look farther back than the few preceding months. The cold summer, and large quantity of rain which fell in the autumn, and fall of the year 1799; were universally observed. To the long continued application of cold, and moisture in the atmosphere, operating on the human body, not accustomed to such constitution and temperature in seasons, we might attribute a great part of those causes inducing febrile affections, especially of the low and typhoid type.

These fevers preserved the character of all other general diseases of this kind; and affected chiefly new-raised men, landmen and marines. A typhus
was

was carried on board the *Canada*, by raw men from the *Cambridge*, who had been sent from some guardship or tender to the eastward, in the *Terpsichore* frigate, that had been long in commission. These supernumeraries, though badly clothed, dirty, and slovenly, did not appear to labour under actual fever, while in the frigate: but that it lurked in their habits, or filthy slops and beds, is evident, from the whole falling down afterwards, and tainting the ships to which they were distributed.

This is a curious fact in the history of contagion, and exemplified in receiving ships every day; that a person carries about him the seeds of disease, with impunity, till some occasion calls the infection into activity; sometimes also communicated to another before it affects himself.

The supernumeraries had scarcely left the *Terpsichore*, when her own crew began to sicken, of whom some died, and numbers were sent to the hospital.

This general disposition to fever in the fleet, according to custom, entirely disappeared, as the warm and settled summer weather approached.

The general cry at this sickly period, throughout the fleet, was an Hospital Ship! It was no rash prediction in me, when the *Medusa* was dismissed, that there would soon be reason to wish her back. In the course of last year the *Saturn*, *Hector*, *Captain*, *Edgar*, *Pompee*, *Ruffel*, *Royal George*, *Achilles*, had been completely disabled by infection. The five last, all sickly at the same time; a force so considerable as sometimes enough to decide the fate of a war. Besides those general infections, other ships were partially affected, such as the *Royal Sovereign*, *Neptune*, *Cæsar*, *Canada*, *Atlas*, *Cumberland*, *Windfor Castle*, *Magnificent*,

&c. Let not therefore any officer boast, that he cares nothing about medical arrangements, for as long as sickness and death are the lot of human beings, it belongs to the man, who has the cause of his country at heart, to be always prepared against contingencies.

May 27th.—The Warrior just come from sea; has in her Sick Berth fourteen cases of ulcer, all answering the character of the malignant ulcer. All attempts at cure have been ineffectual; they were accordingly sent to Plymouth hospital. Here they received no advantage; were brought forward for survey, and sent again to their wards for cure; were brought forward again—again left to be cured; and, I am sorry to add, they were invalided at last without benefit, and no prospects of obtaining any.

This disease, it appeared, made no alarming progress in the Warrior: and had it been infectious, must have affected greater numbers, for no separation was inculcated beyond moving the patients to the Sick Berth.

May —.—The following report comes from the correct and intelligent Surgeon of the Boadicea:

“ The Boadicea having been more than eleven
“ weeks at sea, employed in watching the mo-
“ tions of the enemy, in the port of Brest, re-
“ turned this day to Plymouth Sound to refit.

“ During a long continuance of the easterly
“ winds in the middle of March, a kind of Influenza made its appearance, attacking the patients
“ suddenly, with slight fever, and the symptoms
“ constituting *coryza* and *gravedo*. The inflammation rarely extended to the breast; and the
“ disease, in general, yielded in a few days to the
“ usual remedies.

“ Two

“ Two cases of severe pulmonic affection, (both
 “ now in a state of slow convalescence, and re-
 “ quiring a nourishing light diet,) are proposed as
 “ objects for the hospital; together with a case of
 “ sinous ulcer in the leg, arising from a severe
 “ contused wound, and a relaxed scorbutic habit.

“ The fevers were slight, arising either from
 “ careless exposure to cold, or irregularity.

“ The venereal complaints (eleven) are all cur-
 “ ed: two buboes unavoidably suppurated, and se-
 “ veral were repelled.

“ A scorbutic taint is the only prevalent dis-
 “ ease; and, as usual, retards the cure of every
 “ complaint; and the treatment of every ulcer
 “ has of late been difficult. The lemon juice has
 “ been used in considerable quantity; and I was
 “ obliged to procure a supply from the Mars, pre-
 “ vious to the ship being ordered into port.

“ MAY 17th. (Signed)

“ B. F. OUTRAM, Surgeon.”

The following order was issued from the Ville
 de Paris at sea:—

MAY 4th, 1800.

“ Memo.

“ It is my directions, that there are no sick
 “ in future to be sent to the hospital at Ply-
 “ mouth, from his Majesty's ships and vessels
 “ under my command, without the authority of
 “ Dr. Trotter, physician to the fleet, who will
 “ visit the ships whenever a boat shall be sent to
 “ him for that purpose*.

* An order of this kind was given by Earl Howe in 1794.

“ The respective Captains are to report to me,
“ if, at any time, clothes or necessaries shall be
“ sent from the hospital, with recovered men,
“ uncleaned.

“ The Surgeons of the squadron are to send to
“ Dr. Trotter a monthly state of the sick, from
“ the 22d of April, 1800.

“ (Signed) ST. VINCENT.”

This order was the revival of medical discipline in the fleet; and restored my duties to the sick. But I received no intimation that an hospital ship should be fitted, which had before bestowed such unspeakable comforts to the Sick Berth.

The order for the surgeons to furnish regular reports, put it in my power to call upon them whenever a desire might be discovered for withholding them, which was not frequently the case.

May 18th.—A severe gale of westerly wind forced the fleet to put into Torbay; two sloops of war are supposed to have foundered in it.

May 24th.—The fleet sailed from Torbay.

On consideration of the active duty of the ships that had cruized under Sir A. Gardner, all the winter, I represented to Earl St. Vincent the probable appearance of a prevailing scurvy; and my ideas on the prevention, from my experience and observations on the seasons and weather of the Channel. My opinion seemed to be treated with respect; and the fleet was informed, by his Lordship's order, concerning the supply of vegetables, when arriving in port, as correctors of scurvy.

June 30th.—Arrived the *Temeraire*, over-run with scurvy. R. A. Whitshed desired me to report to him, in writing, the condition of his people; I therefore recommended a fortnight's allowance of fresh beef and vegetables, agreeable to the the general practice in the fleet, to eradicate the disease.

It appears that orders had been given, that no ship going to port, should be detained longer than six days. Unknown to me, a large supply of lemon juice was issued to every ship, as a preventive of scurvy, and ordered to be mixed with sugar and water, as lemonade. Before I was informed of this circumstance, I had recommended a sufficiency of fresh beef and vegetables to the *Superb*, which arrived a few days after. The Rear Admiral, who beheld this disease so general with great concern, I suppose, inclosed my Report to the Commander in Chief.

The *Temeraire* had at this time a few cases remaining of the malignant ulcer with diseased bone. A number equally affected, whom I inspected, had been cured on board by Mr. Burd, and were now doing duty. These cases, though likely to be tedious, were progressive in cure; they were sent on shore, but received no benefit, and were brought forward for invaliding. Mr. Burd, on this occasion, observed, that his abilities and assiduity would have availed but little, had his patients, in their debilitated state, not been largely provided with fresh mutton, excellent port wine, porter, &c. from the table of the Admiral and wardroom.

July.—Sometime in this month, I was honoured with the following laconic epistle,

“ Sir,

“ Sir,

Ville De Paris, off Ushant,
July 13.h.

“ I very much disapprove your officious interference, to prevent His Majesty’s ships under my command from putting to sea, the moment their beer, water, and provisions are completed, which is ordered to be done with the utmost possible dispatch; and I desire you will discontinue this practice.

“ (Signed) ST. VINCENT.

“ To Dr. TROTTER.”

On first perusing this letter I was rather at a loss to conjecture what it alluded to; but suspected that it must relate to reports given by order of R. A. Whitshed, on the prevailing scurvy in the Temeraire and Superb, mentioned above.

On showing it to some of my friends in the fleet, they advised me to reply. To this I answered No: the temper that could dictate such a letter to a physician in the exercise of the best affections of the human heart, could not be satisfied with explanation. On such an occasion, if the medical character possesses any virtue within itself, to that he must fly for sanctuary; and let the storm rage that he cannot appease.

It need scarcely to be mentioned, that this letter is incorrect in point of service, for a medical officer has no power to detain a ship. I acted in compliance with the order of the senior officer on the spot. But although my report prescribed a fortnight’s allowance of fresh meat and vegetables to these scorbutic crews, it did not imply that they should

should be detained a single hour in port: on the contrary, a month's vegetables, in similar conditions of scurvy, have often been carried to sea.

The harsh terms of this letter, I must confess, wounded me grievously. I became tired of a station that exposed me to unmerited suffering. I had lately displeased one Commander in Chief by claiming protection from insult; and a second was now reproaching me while fulfilling the duties of my office.

Ever since the general scurvy of 1795, a store of lemon juice had been supplied to every ship; and all cases of scurvy had been cured on board. But notwithstanding, we still looked for recent vegetables by way of prevention. In a warm climate the acid fruits are grateful ingredients in diet, and to these countries nature has confined their growth. In the cold seasons of the Channel, however, the native acid is unnatural: we carry it to sea from necessity: it cures scurvy, and preserves human life; but at the same time it weakens the digestive powers, consumes the fat, and lessens muscular vigour. By these means, that strength of body is impaired, that can alone contend against the tempestuous weather to which the home seas are liable for eight months out of the twelve. I conceive also, that the vigour and activity of a ship's company ought to be hoarded up, as it were, for grand occasions; that they may wield a heavy artillery with effect on meeting with an enemy. These facts are positive and decisive. When they come to be otherwise, the laws of Nature, which govern the seasons in our hemisphere, must change: and a new *Archæus* must administer new principles and movements, to regulate the system of animated creation. I was
aware

aware that much activity would be infused into the operations of the Channel, and for that very purpose wished the ships to be recruited with real not merely apparent health.—It will not be wondered at, if after this transaction I resolved to trouble his Lordship no further with my correspondence: in this I was the more sorry, as I had cherished the hope, from his known discernment, to have pursued those plans of improvement in the medical department, which were left unfinished through the indisposition and retirement of Admiral Earl Howe.

July 10th. A case of inveterate scurvy was this week successfully treated, on board the *Superb*, by the concrete acid of lemons, as prepared by Mr. Coxwell of Temple Bar, after the manner of Scheele*. The case, which was attended by Mr. Watherston, is detailed at full length under the article Scurvy, which see. As this case was uncommonly severe, and every thing guarded against that could deceive us, in justice to public service, I addressed the Lords Commissioners of Admiralty, and requested a supply for the fleet.

This concrete form of the citric acid would appear to be the last *desideratum* at sea for the cure of scurvy; as it will keep for many years, and is unaffected by the air, and easily portable. But I can already see that the naval service is not likely to be soon benefited by this ingenious discovery. There is a *worm* that cankers the bud of all improvement here!

* *Vide* Crell's Journal for 1784.

Lord St. Vincent has directed the Sick Berths to be enlarged, and more commodiously fitted for the sick. What a pity he did not point out the Berth of the Centaur for a model.

August. Fresh *vegetables* are now sent to sea with every ship for the use of the fleet; but it does not appear that any *live stock* have yet been ordered.

All the ships which have lately arrived have much scurvy. In those cases where it has appeared the ounce of lemon juice, and the ounce of sugar mixed with water, which is Lord St. Vincent's *formula*, do not seem to have checked its progress. A multitude of cases still occur, in which the surgeons are under the necessity of giving from six to eight ounces daily, in the usual manner, to effect a cure.—The people in the Windsor Castle are evidently much emaciated by its use.

Mr. Burd of the Temeraire, in his last report from sea remarks: “In consequence of the recruit
“ which the ship’s company had in harbour, the
“ general tendency to scurvy has disappeared.
“ But it is still very marked, in many of those who
“ were worst previous to our going into port;
“ though even with them since coming to sea,
“ by the use of lemon juice we gain ground.
“ And I beg to remark, that their strength some-
“ what fails under its use; and emaciation of
“ body is perceptible to the most inattentive
“ observer.”

August 4th. Ten cases of the old ulcer appear still on board the Terrible: they seem to gain no ground by their present treatment.—The ship
failed

failed on the same day as a reinforcement for the North Sea.—The scurvy is also prevailing in this ship; having been long at sea.

The small-pox during the present cruize, have appeared in the Cumberland and Gibraltar; in the former ship five have died.—These events urged me to renew my application to the Admiralty, in behalf of the vaccine inoculation, which had now triumphed over all detraction and opposition: I therefore wrote to Mr. Nepean in the following terms:

Sir,

Plymouth, August 14, 1800.

In addition to the former occurrences of small-pox in the ships of the fleet, which at different times I have had the honour to mention to their Lordships, I am sorry to relate, that they have appeared lately at sea on board the Cumberland and Gibraltar; and in the former five men have died of that disease.

Their Lordships have probably now had some information of the successful progress of the inoculation for the vaccine disease, as an effectual security against small-pox. This practice has been so deservedly supported by the first medical characters, and promises so much benefit to society at large, that it now becomes my duty to request permission from their Lordships to introduce it into the ships of the fleet, as they successively arrive in this port.

Some thousands of cases have been inoculated in this neighbourhood with the happiest issue. The vaccine disease can only be communicated by inoculation; is not infectious by other means; does not confine the patient by febrile indisposition, and may be safely tried in all situations of naval duty.

To seamen in public service it therefore holds out pre-eminent advantages*.

I have the honour to be, &c.

TO EVAN NEPEAN, Esq.

The answer of Mr. Nepean to this letter informed me, that in consequence of a Report on the subject from the Commissioners of Sick and Hurt, their Lordships had ordered a trial to be made on board the *Triumph*, then refitting at Portsmouth.

The business was thus taken out of my hands. There seems indeed of late, some distrust to have been entertained at every proposal that I made for the public good. And in a few months I had to regret the tardy prosecution of the new inoculation, and its total decline in the fleet, without having done one-tenth of the benefit that might have been accomplished. I had prepared an address, on purpose to subdue the superstition and ignorance of the seamen; and from my official and personal influence among them, could not have failed to conduct it with effect.

Mr. Tosh, the surgeon of the *Triumph*, in his department, prosecuted the practice with due success; none of his people being objects for the Sick List during the cure.

The *Ville De Paris*, while refitting at Portsmouth, imported the variolous infection, for which twelve cases were sent to Haslar hospital. Dr. Felix, who at this time was surgeon, mentions

* This practice was proposed in my former Volume.

upwards of two hundred men in that ship who never had the small-pox.

The following Letter, on the police of naval sea-ports, is so nearly connected with a preventive system of medicine, that it appears necessary to give it a place here; that our successors may know the channel for obtaining redress, whenever public service falls under a similar predicament.

“ Sir,

Plymouth Dock, August 18, 1800.

“ Although the subject of this letter may in some respects be deemed foreign to the department of medicine; yet, as connected with it in others, in the general plan of preserving health in the fleet; I shall hope to be forgiven as an executive medical officer in requesting the attention of their Lordships to what may be conceived of more importance to naval service, than any thing which I have had the honour, for a length of time, to submit to their deliberation.

“ Since the ships of the fleet have chiefly refitted at the Western ports; and the pay as well as prize-money of the whole have been paid at Plymouth, an unusual influx of money has of course taken place in these towns; but especially at Plymouth Dock. Where so large a number of seamen, from the increased number of ships in the fleet, have occasion to spend their wages, those tumults and excesses, the common offspring of their irregularities, when unrestrained by discipline, have multiplied in proportion. Sudden death, in many instances, has been the consequence; health
has

has suffered in the whole ; and every vicious propensity has been encouraged. The inhabitants of this place, in order to avail themselves fully of the rich harvest which the profusion of the seamen is daily holding forth, have, by interest and address, with the neighbouring magistrates, opened, within these eight months, not less than one hundred and forty *additional* public houses in the town of Dock only ! Each of these taverns may be considered as the haunts of so many *dæmons*, that are dooming the destruction of our people ; as so many *volcanos* that are pouring forth the blasts of death and disease ! A certain number of houses have, by the strong grasp of avarice, been pitched upon for the purpose of gin-shops ; and if the present inhabitant did not chuse to take out the licence for vending liquors, he was turned out of doors, and his house made over to somebody else. If such is the prevailing practice, their Lordships must be aware into what dangerous society the heedless and improvident seamen may be decoyed. In resorts of this description the general mutiny of 1797 was first planned : there the Irish catholic priests took up their abode, when they swore in the United Irishmen of the fleet to extirpate every protestant in our ships ; and there also the crimps are concealed, that delude and persuade our seamen to desertion. Such is the degraded state of police of this town containing upwards of 25,000 inhabitants !

It is by no means my intention, in this letter, to abridge the pleasures of the seamen ; but I am humbly of opinion that much might be done to restrain their excesses, to meliorate their moral character, and to guard them against imposition ; which would redound to the public benefit. From my general intercourse with every officer and ship,

more of this business comes under my observation than that of any other person whatever. There is scarcely a day that I walk from my lodgings to the boat, but some of the horrors that I am now reprobating fall under my view. In those conflicts, which during a state of ebriety the seamen have among themselves so frequently in the streets, nothing can exceed the savage apathy with which they are beheld by the inhabitants, who value them only as the dupes of extortion; and look on, while they half-murder one another, with ferocious pleasure.

What I would venture to recommend on this subject, is a total change in the administration of the police, and to be conducted after the model of Westminster. No person would then be permitted to open a public house but people of unexceptionable character; and constables or other officers might be so arranged to patrol the streets, as to prevent riot and disorder. The seaman would thus learn to spend his wages with decency, and return in due time to his ship, without endangering his health or his life, by continued intoxication.

A police of this description, under respectable magistrates, would introduce a new *æra* into naval service: would be a most effectual check, and tend to extinguish that licentious spirit that has gone abroad among our seamen; and which runs much hazard of being renewed with fresh horrors in the event of paying off the ships at a general peace.—I have the honour to be, &c.

TO EVAN NEPEAN, Esq.

The contents of this letter received due attention from the Admiralty: a copy of it was sent to the
Duke

Duke of Portland, one of his Majesty's Principal Secretaries of State, with a request from their Lordships, that his Grace would take such steps as would correct the evil of which the physician so emphatically complained.

The weather towards the end of July became exceedingly hot; the thermometer frequently rising in the shade to 78 and 80. Scarce a shower had fallen for ten weeks; the ground was every where much parched; the harvest early, and the corn good though not very abundant.

On the 20th of August, at midnight, commenced a most tremendous thunder storm: attended with more vivid lightning than usually seen in England: heavy rain fell with it; the air became very cool immediately after, to which succeeded cold northerly winds.

The Renard, Captain Spicer, with another sloop, has again come from Liverpool with new-raised men. Notwithstanding the distress that had happened before, men labouring under infectious fevers were still found in the guardship in the river Mersey. With a view of saving his people from surrounding disease, Captain Spicer very properly called in the eminent advice of Dr. Currie, who pointed out fifteen men labouring under different degrees of typhus. Yet, after all precautions, some cases appeared on the passage, which from necessity were sent to Plymouth hospital. Had the weather at this time been tempestuous, or had

it been at another season of the year, these vessels might have suffered a-fresh, and infection followed wherever the raw men were disposed of.

Dr. Currie, with the other medical advisers, very justly remarked, that vessels of this size and construction are extremely ill adapted for the accommodation of an extra compliment of supernumeraries.—How much more conducive to health would be the employment of troop-ships for this duty? (*Vide* Article Contagion.)

August 20th. Monday: this day Admiral Sir Alan Gardner, Bart. struck his flag; being the last flag-officer who served in the fleet, on the first of June 1794, under the command of Earl Howe.

In consequence of very just complaints made by the surgeon of the *Ville de Paris* to Earl St. Vincent at Torbay, in May last, his Lordship was pleased to make representation to the Admiralty, on the necessity of fitting some hospital for the accommodation of the sick. At the Sick Quarters of Dartmouth, men in fevers were found lying two and two in a bed! While an hospital-ship was attached to the fleet, there seemed no want of a Sick Quarters at Torbay: but the former Commander in Chief, having suggested the dismissal of that ship, it is rather unkind to perceive the Channel fleet so ill provided, as appears from this complaint. A Commissioner of Sick and Hurt was therefore ordered to Torbay to inspect those ghastly retreats of sickness; and a large dwelling-house

house near the beach was directed to be fitted up immediately for the reception of our people!

August 27th. Mr. M^cLaughlin of the *Achille*, mentions a number of ophthalmias having appeared in that ship, during a long continuance of easterly winds in July; similar to what is related by Mr. Riley in Vol. II. These complaints, attended in some cases with a considerable degree of fever, were frequent in other ships; declined as the wind shifted to the westward, and would return as it veered again to the East.

August 29th. The *St. George* of 98 guns, just arrived from a fourteen weeks' cruize, has suffered severely from scurvy; and the people are evidently much emaciated from the use of lemon juice; there are in the Sick Berth some cases of dyspepsia from this cause.

Mr. Johnston of the *Atlas*, in his last Report, mentions not less than one hundred cases of scurvy having occurred last month; but only two were put into the Sick List; though the whole take lemon juice for the cure. It thus appears that an ounce of lemon juice and an ounce of sugar do not, even in this finest season that ever was known in the Channel, suspend the progress of scurvy.

Mr. Burd of the *Temeraire* gives the same testimony. He says, "there was little appearance of scurvy last month, until these few days past; and symptoms of it are again making their appearance." Cases also appear in the *Defence*, and most other ships, for none of them were duly recruited when last in port.

Mr. Hartthorne of the *Edgar*, one of the advanced squadron at anchor off Brest, says, "many

“ take lemon juice for the cure of scurvy and get well; but our people are grievously fatigued with hard duty.” It is to be remembered, this ship, in the spring, suffered from a general fever.—The Neptune has had some severe cases of scurvy last month, to the number of twelve unfit for duty, as appears from Mr. Grant’s Report.

August 31. Arrived the Bellona after fourteen weeks’ cruize in good health, but like the St. George, emaciated people, and in want of refreshments.

The Marlborough, one of the advanced squadron off Brest, has general scurvy, according to Mr. Hughes, but slight in most cases; and but seven in the course of the month unfit for duty.

Large supplies of vegetables are ordered to be prepared for the fleet, by different agents of the Sick and Hurt Board. The lemon juice, in the quantity as made into lemonade, does not seem, in this fine weather, even to prevent scurvy.

Mr. McGrath in his last Report mentions a typhus fever again raging in the Ruffel; sixty-six having been taken ill last month, of whom one died. It is however probable, from the people’s good state of health after the extinction of the former disease, that a fresh infection has been imported. (See his Report.)

September. The Commander in Chief has very justly pointed out to the Board of Sick and Wounded, their inattention to the appointments of surgeons’ mates. For two or three years past the greater part of the ships of the line have had only one mate, sometimes very indifferently educated; while most of the frigates in the Channel have had two.

Liberal

Liberal supplies of cabbages, onions, turnips, and carrots are now sent to sea, from the port of Portsmouth as well as Plymouth, and the health and strength of the fleet have now a chance of being recruited before the commencement of winter.

September 13th. The Captain, just arrived, has been fifteen weeks at sea, and sends ten people on shore, five of the number in the last stage of debility, though without any generic disease: such are the effects of long channel cruizes.

The want of an hospital-ship is still more and more apparent: cases of phthisis, of dyspepsia, and other spasmodic affections are unusually numerous and severe. A large proportion, under the advanced stages of chronic disease, seem past medical aid, that would have received certain relief had they been more early moved on shore.

It is reported, that at this time a great number of French prisoners on board the prison-ships in Homaoze are afflicted with scurvy. Yet the season has been favourable for correcting this tendency. Their ration of provisions is small; and the disease had probably been contracted at sea, and assisted by impure air in their present crowded apartments.

September 18th. The Edgar, just arrived, has a few objects for the hospital; little scurvy, but
 G 4 the

the ship's company is much weakened, and need recruit.

The Royal George is in good health at this time, the fever having ceased for some months.— Like the other ships, refreshments are here much wanted. The Canada, just arrived, is much in the same condition.

Mr. M'Grath just relates the disappearance of the typhus fever of the Ruffel, with an account of his successful practice of the affusion of *cold water*, according to the learned Dr. Currie's plan. (See Contagion.)

September 22d. Mr. Adamson of the Doris, just arrived from a four months' cruize, gives a most favourable report of the concrete citric acid. (*Vide Art. Scurvy.*)

September 26th. The fleet put into Torbay from a severe gale of wind. The weather had been fine till this time.

It is said, that the Commander in Chief had just reasons for finding fault with the petty accommodations of the sick at Torbay, on his return from sea. The whole plan, indeed, as well as its spirit, is an epitome. It is like reducing old Drury to the Thespian cart. There was even a necessity for sending joiners and carpenters from the ships to accelerate the building.—When I look round and see the stately and splendid edifices rising every where for the use of the army, my heart bleeds for the neglected navy.

September 26th. Arrived eight ships of the line. The good effects of the large supplies of vegetables lately sent out, are evident in the whole, and the strength of the men much restored. A number of consumptive cases appear in the Sick Berths in the last stage; and in the same disease
more

more deaths have happened at sea than is usual in the Channel in the summer months.

The Excellent was ordered in, as reported, for what was called an Influenza. But nothing was found on board, except a general attack of slight catarrhal symptoms, with headach; which readily yielded to trifling remedies.

The ships at this anchorage have just received the following order :

General Memorandum.

Temeraire, 26th
Sept. 1800.

The Commissioners of Sick and Wounded seamen having reported to the Lords Commissioners of the Admiralty the favourable effects of the vaccine inoculation, their Lordships have been pleased to direct, that those seamen who are desirous thereof are to be inoculated.

It is therefore the Commander in Chief's directions, that you order the respective surgeons to inoculate any of the seamen who are desirous of it accordingly *.

(Signed) J. H. WHITSHED.

To the respective Captains, &c.

Thus, these physicians have at last condescended to give an opinion on this popular practice: excellent humanists! There is scarcely a village in Great Britain that has not long shared of its blessings; and six months ago the Government of France

* We thus observe, that no admonitions or explanations were employed to persuade the ignorant seamen to embrace this salutary practice; alas! they knew not its value.

borrowed

borrowed a British physician, Dr. Woodville of the Small-Pox Hospital, to introduce it into Paris!

At this time the Board of Sick and Wounded sent to the Royal Hospital at Plymouth a few lancets armed with *vaccine* matter, with directions, that if these should fail in communicating the disease, the medical staff of the hospital should send by the coach to London, *two children* to bring down the infection to the fleet. Would it not have been preferable to send a Gloucestershire cow, as proposed in my second Volume? Before this time one thousand children had been inoculated in the vicinity of Plymouth for the vaccine disease, at which port out ships refitted.

Mr. M'Grath of the *Ruffel* gives a favourable report of *arg. nitrat.* in a case of epilepsy, that reduced the frequency of the fits, from several times in the day, to once a-week.

28th. Catarrhal affections that prevailed in the *Namur* last month, according to Mr. Walker's Report, have now disappeared; the usual effect of variable channel weather. A considerable degree of scurvy has also appeared in this ship during seventeen weeks at sea.

Mr. R. Thompson of the *Childers*, gives the following account of a trial of Coxwell's elegant concrete citric acid. "I beg leave to observe, that I have made trial of the chrySTALLIZED lemon juice, (during a ten weeks' cruize,) which you were so condescending to recommend; and I have the pleasure to say, that I found it to answer all the purposes of the fresh fruit."

Catarrhal complaints have been common in several ships, at the late change from dry to wet weather;

weather; the usual consequence of the variable Channel climate; but this effect has been partial, and the symptoms speedily yielded to a night's rest, or trifling remedies. Some of the surgeons, on very slender foundation, have called this complaint by the unscientific appellation of Influenza; while the greater part have retained the generic term Slight Catarrh.

From the meagre and emaciated figures which the sick of the ships now exhibit, after these long cruizes, I have again been induced to make application for supplies of fresh meat to the Sick Berths at sea. Perseverance has done much in some of my former labours, but in this I have been hitherto completely foiled.

Strong prejudices having been spread abroad concerning the danger of adulterating the concrete acid of lemons, I have been under the necessity of representing the futility of such surmises to the Admiralty; for from the nature of its preparation it is impracticable without being easily detected.

Mr. Willes of the Centaur mentions a fever of the low typhoid type appearing in the Centaur off Brest; but no deaths happened, and it has disappeared. In this situation great advantage was obtained from a large stock of fresh mutton, porter, &c. with which the Sick Berth of this ship is furnished at the expence of the people themselves. (Vide Article Diet.)

A letter from Mr. Tosh of the Triumph announces the perfect recovery of four cates of the inoculated

inoculated *vaccine disease* on board of that ship; and that the success of this had made many of the seamen candidates for the inoculation. This forms a new æra in the navy. (Vide Variola Vacciola.)

Some cases of ulcer in the Warrior have lately proved fatal.

October 10th. Arrived the Renown, London, Impetueux, and Courageux, under Sir J. B. Warren; these ships attended the unfortunate expedition at Ferrol, and have been absent nineteen weeks. The scurvy has been kept under by some refreshments obtained at Oporto, and lemon juice; but the people are in much need of fresh meat and vegetables. A few cases of ulcer, rather obstinate, appear in the Renown, the effects of debilitated constitutions.

Mr. Lloyd, surgeon of the Renown, in this long cruise made trial of the concrete citric acid in the cure of scurvy, and gives it the same commendations as bestowed upon it by every other surgeon.

October 12th. The fleet sailed from Torbay.—

A much larger proportion of phthysical cases have appeared lately among the seamen, than was ever observed in the Channel. Probably the lemon juice has done harm. But the harassing duty and long cruises must produce debility in extreme.

Yet none of these cases exhibited the florid consumption; the countenance was always pale or fallow. Might not a long use of vegetable acid excite a latent scrophulous disposition in the lungs or mesentery, and produce ulceration, emaciation, &c.?

The

The following order from the Commander in Chief seems to allude to the prevailing consumptions.

“ General Mem.

Ville de Paris, at sea,
Oct. 13th, 1800.

“ Confident as the Commander in Chief is, that
“ many consumptive cases might be prevented,
“ and others mitigated by timely application of
“ flannel next the skin, in catarrhs, coughs, and
“ common colds; he most seriously exhorts the
“ captains of the ships composing the fleet under
“ his command, to inculcate this doctrine in the
“ minds of their surgeons; who, from *caprice* and
“ *perverse opposition* to every wholesome regula-
“ tion, grossly neglect this important duty.

“ The moment any patient is described on the
“ sick list, as labouring under the abovementioned
“ complaints, the Captains are required to enforce
“ the wearing of flannel shirts or waistcoats next
“ the skin; and to see that the purfers are always
“ provided with adequate flops for this purpose.

“ (Signed) ST. VINCENT.”

It is plain from the nature of this order, that some accusing spirit has been at work.—From direct application of the medical officers to Earl Howe, these articles became a part of naval cloathing in the severe weather of January and February 1795. At that rigorous season Lady Howe kindly presented a suit of flannel to every man on board the Queen Charlotte. All the surgeons of whom I have made inquiry, are in the constant practice of attending to the cloathing of the sick at all times. In these pages are proofs sufficient to rescue them from the imputation of neglect.

neglect. Had his Lordship inquired a little further, he would probably have learned from their officers, that they are a respectable body of professional men; faithful and humane in the discharge of their office; and earning the humble pittance which they receive from their country, with as much integrity as any class of men whatever. Men that had received a share of polite, as well as a medical education, could not but be deeply wounded with the language of this order.

The very practice which his Lordship here inculcates, carries with it its own confutation. Only think of the condition of a seaman at hard labour, being drenched in perspiration with flannel next his skin: he has no wardrobe to shift himself, and if he does not shift he is no better than a walking flink-pot. It will be the same if he sleeps in bed with this flannel on: the practice is filthy and unwholesome. What consumes so much perfumery in the present day? it is the beau swaddled in flannel to cover the indelicate smell of his own atmosphere. If British seamen are to wear flannel next their skins, they are not subjects for a ship; they must soon lose the hardihood of constitution that fits them for their duty. Clothe them as warm as you please, but in the name of cleanliness give them linen or cotton next the skin. Read our history of phthisis, and judge whether flannel could have counteracted its causes.

Mr. Grey of La Nymphé, while off Cape Finisterre last September, remarks, “ Six men were
“ suddenly seized with cholera. The weather till
“ this time had been excessively hot and dry, and
“ now became rainy. They were attacked with
“ most

“ most severe griping, vomiting, purging, and
 “ spasms of the muscles of the thighs and legs.
 “ In one patient, shivering, pale countenance,
 “ and great prostration of strength took place at
 “ the beginning of the disease.

“ The abdomen, thighs, and legs were well
 “ fomented, and large doses of opium immediately
 “ given; which, in general, relieved the patient
 “ in the course of an hour, and procured sleep;
 “ on awaking from which, he felt himself free
 “ from all the symptoms, except slight spasmodic
 “ twitches of the muscles of the legs; which
 “ continued to recur occasionally for a few days.
 “ Small doses of opium and cinchona were given
 “ till they went entirely off.”

The excessive hot weather of the summer, with a sudden change to a low temperature, affected a number of men with cholera, in different ships. When treated in the manner of Mr. Grey, they soon got well.—But our most general diseases are complaints of the pulmonic or catarrhal kind.

October 27th. The fleet anchored in Torbay.

The Jennerian inoculation goes on successfully, in the hands of Mr. Bellamy of the Spencer.

A case of small-pox has just appeared in the Superb. Mr. Watherston has therefore carried vaccine matter to sea, the seamen having assured me they would most willingly submit to it.—Mr. Dunning of Plymouth Dock, the ingenious writer on this disease, and disciple of Jenner, kindly supplies our surgeons with recent vaccine matter from his numerous patients.

The weather for the last three weeks has been fine indeed for the season.

From the long prevalence of westerly winds, our seamen in Torbay are now receiving that recruit from fresh meat, &c. which they so much
 want.

want.—The watering duty is however a great drawback on the health of the fleet. Strange, that a few pounds should be put in competition with so vast an object! I would have the seamen and marines of a fleet fed and exercised in a manner that would preserve them in the highest possible strength: keeping every moment in view the probability of coming to action with the enemy. But the water at Torbay, like the other ports, ought to be supplied to them, for it unnecessarily exposes a number of men to severity of weather.

Mr. Bell of the *Bellona*, remarks, in his report of October, “that catarrhs have been less prevalent than in any former autumn I ever remember.” This remark shows, that there was no reason for considering the disease, as it appeared in other ships, any thing more than the effect of variable weather, or modes of duty that required great and frequent exertions.

November 1st. The fleet sailed from Torbay, under Sir H. Harvey, Earl St. Vincent’s health not enabling him to combat the Channel seasons, as winter approaches.

November 4th. The *Warrior*, just arrived from an eleven weeks, cruise off Brest, is now free of the malignant ulcer, which was so prevalent in May last, and more or less during the summer. Mr. Mulberry observed an almost immediate difference in the disposition and appearance, as soon as the cooler weather, with fresh gales of wind, set in. A similar remark is made by Mr. Moffat of the *Triumph*, in our former Volume, Art. Malignant Ulcer.

The *Warrior*, while refitting at Portsmouth in August last, by some means was infected with typhus. Five cases were sent to Haslar, of which two died. In September the ship sailed, and six

others died at sea, before the disease was completely overcome.—A filthy and badly accommodated hulk, in Portsmouth harbour, was justly blamed for generating this fever. About four years ago, attempts were made by me to correct these nuisances. (See a letter to Admiralty at the end of the Art. Ventilation.)

Novemer 5th. A patient in small-pox having appeared on board the *Impetueux*, Mr. Fleming, with becoming dispatch, procured *vaccine matter*, and immediately inoculated fourteen people, including a Lieutenant: others hesitate from superstitious motives.

About this time three frigates, fitted as troop ships, *Modeste*, *Resource*, and *Dido*, put into Plymouth Sound, with a view of completing the number of soldiers to carry to Egypt. The Admiralty directed me to inspect them; the *Resource* and *Dido* were sickly. Some infection had probably been carried on board by the troops, many of whom were raw recruits, and had come from hospitals. They had moreover slept some nights on the boards. These ships seemed badly fitted for preserving health; the soldiers in a most crowded situation lay in the orlop, and no air-flews had been constructed. The surgeons had no mates, nor extra necessaries for the troops, till supplied here on my suggestion.—The fever was very slight; and the whole arrived in three weeks on the coast of Syria, having a fair wind all the way.

November 16th. Sailed the fleet from Torbay.

In the course of last week, the whole of the squadron cruizing off Brest have been forced into port by severe weather. The *Marlborough* of 74 guns was wrecked near Glenan Island; but fortunately the crew saved.

November 23d. The fleet returned to Torbay, under Sir H. Parker.

It appears from the monthly Report of Mr. M'Cormick of the *Immortalite*, for July, that the typhus fever brought from Liverpool in the *Sea Gull*, was also communicated to that frigate by some of the men. It was mild in its symptoms, and spread no farther than the new-comers. Mr. M'Cormick speaks handsomely of the attention and discipline of Captain Hotham and his officers on this occasion. We thus see how widely infection may spread from a single ship; it was fortunate that these men were mixed with others during a season that has uniformly either moderated or checked such kinds of fevers.

Mr. M'Cormick adds, "A few days after going to sea, a catarrh became very general in the ship, hardly one officer or man escaping it. The weather was remarkably fine at the time; the thermometer, in the shade, seldom stood below 72; and the medium heat between decks, when the watch below were in bed, was 84; notwithstanding the current of air, circulated by three large and well-attended wind-sails.

"In the first part of the month of August we watered at the *Île D'yeu*; the heat was intense; and the greater part of the men on shore was attacked with vertigo and severe pain of the head, which was also very tender to the touch. As I considered these complaints to arise from excess of stimulus, the indication I followed was its abstraction; which was done by repeated doses of calomel and jalap, and the application of cold water to the part more immediately affected.—Few of these cases were in the list ten days."—Query? Would not V. S. be the most

most expeditious and certain remedy in such complaints?

“ Towards the end of October, in the 14th week of our cruize, many of the people were slightly affected with scurvy. The lemon juice had been daily mixed with their grog, together with the allowance of sugar.—On my representation to the Captain, an additional allowance was served unmixed; and in a few days the scurvy entirely disappeared.” The juice must have been adulterated.

November 24th. In the course of the last summer, several ships that received much pay and prize money, carried to sea a full list of venereal complaints. Yet the whole have been cured in a few weeks; partly owing to the seaman making his disease known in due time, but also being mild in its symptoms compared with former times. From the whole Channel fleet, consisting of fifty sail of the line, and an equal number of frigates and small vessels, coming to refit at the port of Plymouth, it has been the means of bringing into this town more women of the frail kind than have ever been known at a King's port. Yet the occurrence of the venereal disease has not yet been general, compared with former times.

The patients at the Royal Hospital here amount to about five hundred.—On the 20th seventy men were invalided after an interval of six weeks; a large proportion of them were old men, who are incapable of the present severe duty. Surely this is wonderful health! But Plymouth hospital is not yet remarkable for the cure of bad sores: some

of our surgeons cure them with infinitely more success and dexterity on board.

November 25th. The Boadicea, after twenty-three weeks' absence, from Mr. Outram's report, returns in great good health; as detailed in the following manner:

" The Boadicea sailed from Plymouth on the
 " 18th of June, and has ever since been employed
 " on the Ferrol station.—During the greater part
 " of the cruize we have had a succession of strong
 " easterly winds, and fine weather, and the Sick
 " List has continued small since the venereal
 " complaints, and other ill effects of indiscre-
 " tion and irregularity in harbour were got the
 " better of.

" At the end of the tenth week we went to
 " Lisbon, where we remained five days, and re-
 " ceived a most seasonable supply of fresh beef,
 " vegetables, fruit, and other refreshments, which
 " effectually corrected every scorbutic tendency.
 " the judicious allowance of lemon juice and
 " sugar daily served with the grog in the form
 " of punch, together with a large proportion of
 " onions, issued out from time to time to every
 " mess, have doubtless also contributed materially
 " to our present high state of health.

" The late change of westerly winds and damp
 " foggy weather have not affected our Sick List;
 " which I attribute to the very great pains that are
 " taken to make every man change his wet clothes
 " and expose them in the rigging to dry the first
 " favourable moment: any disobedience in this
 " respect being severely punished.

" One

“ One case of typhus, in which the lungs were
 “ most dangerously oppressed, occurred in the
 “ beginning of July. Notwithstanding the op-
 “ pression it was found necessary to use wine in
 “ considerable quantity, and this, with other cor-
 “ dial and stimulants, with blisters, produced the
 “ happiest effects *.

“ The ulcers at first were very troublesome-
 “ especially those formed in consequence of glan-
 “ dular abscesses: at present however we have
 “ only one case of sinous ulcer.”

Mr. Thomas Simpson of the Fisgard, reports the variolous infection being just apparent in that frigate; imported, as supposed, from a child brought along-side, or else from the town of Dock, where the small-pox are very fatal.—I have recommended Mr. Simpson to inoculate all who have not had the disease with *vaccine* matter; and Mr. Dunning has, as usual, kindly supplied him with it.

The following ingenious remarks come from Mr. Perkins of L'Uranie, which frigate has been absent since the 28th of May:

“ Intermittent and continued fevers, fifty-three
 “ in number, have been our prevailing complaints;
 “ with great debility, and attended with an uncom-

* A discerning surgeon would never think of bleeding in such a case as this: where it has been done, it must have been owing to want of experience, which shows that stitches, so called, oppression and strictures of the breast, are really very common attendants of typhus.

“ mon disposition to putridity. A very abundant
 “ use of bark and wine restored them, but not till
 “ after a long and tedious convalescence.—Nearly
 “ all the seamen’s wives (who are not included in
 “ the present return) suffered from the disease;
 “ in whose constitutions it first appeared by sore
 “ throat *, determination to the head, and am-
 “ menorrhœa.

“ None of the scorbutics have been confined to
 “ bed; but all required an unusual quantity of the
 “ acid to affect them. Three ounces, repeated
 “ thrice, in some cases, every third hour of the
 “ day, and continued three or four days, scarcely
 “ arrested the progress of the disease. (Thirty-
 “ three not fit for duty.) But this I think was
 “ alone to be attributed to the imperfection of the
 “ medicine. The women suffered from this dis-
 “ order also; and in addition to the accustomed
 “ symptoms, *strangury* and *leucorrhœa* were pecu-
 “ liarly distressing.”

These last symptoms are new to our history of the scurvy; and strongly mark the difference of morbid action in the female constitution, in both solids and fluids.

The lemon juice supplied to this ship, was perhaps, either spoiled by keeping, or adulterated by the acetous acid. It is said that in squeezing and preparing the juice, a confidential servant of the Sick and Hurt attends to prevent frauds. This may be; but lemon juice has now become so great an object of trade, that much danger is to be apprehended from receiving it through the hands of a contractor. I am not partial to men of this description in England; the business ought to be put on another footing, by Government, import-

* Probably the *globus hystericus*.—T. T.

ing the fruit in King's ships, and preparing it by the servants of Government. If ever our plan of medical institutions in the navy should be adopted, the preparation of lemon juice and Coxwell's concrete will be conducted on buildings erected in the naval dock-yards, or elsewhere, for the express purpose of preserving them genuine.

November 28th. The Alcmena frigate, Captain Digby, which sailed from Plymouth three weeks ago, carried out the *variolous infection*. Two cases first taken ill were confluent, and terminated fatally. A small prize having been cut out of a Spanish harbour, the surgeon requested the Captain to send in her all those who never had small-pox.

These precautions, however, did not secure others; the disease again appeared, and the frigate put into Lisbon. The surgeon found thirty men who were unconscious of having had small-pox; this infection was brought on board by a woman of the town, who had buried her child the day before, and died of that disease; so that it had been carried in her wearing apparel. The men first taken ill messed with this woman, and sickened about the seventh day.

I have observed for some time past, that the ships coming into Hamoaze to refit, soon suffer from the excesses of the people on shore. A week has sometimes done more harm than a cruize of five months; and not to be wondered at, since two hundred public houses have been opened in Dock, and its neighbourhood in addition to what were licensed before, within the last twelve months! Every walk or lane which the sailor is

used to frequent, is now crowded with gin-shops.—
I addressed another letter to the Admiralty on this subject.

December 2d. The fleet returned to Torbay; a squadron was dispatched to Portsmouth, and another came into Cawsand Bay. Seven sail were left off Brest.

December 4th. Fifteen sail of the line sailed from Torbay.

December 7th. The frost set in, rather severe.

December 10th. Mild weather.

It appears that the large army which lately appeared off Cadiz were overrun with the scurvy: nay, so little precaution had been taken to prevent this disease, that part of the artillery which, in the early part of the summer, encamped on the little islands near Bellisle, were then afflicted with severe scorbutic symptoms. Yet troops in this condition are to be opposed to the batallions of Bonaparte.

In the course of last month several cases of ulcer, of rather a malignant appearance, were observed in the *Barfleur* by Mr. Lloyd. By great attention to dressing and cleanliness, they, however, soon assumed a better aspect. I found one marine with a carious tibia, who was sent on shore.

The ships of the advanced squadron off Brest for the last three months, have enjoyed wonderful health,

health. In a few instances we still find phthical complaints; and the oldest seamen seem entirely worn out by the long cruizes; the late surveys being chiefly of this description. The *Cæsar* has been uncommonly healthy.

In the course of last month ophthalmia was epidemic in the *Russel*.

The following remark, from Mr. Bell of the *Bellona*, is of great value. "The strictest and most punctual attention is paid by our officers of all descriptions to prevent the seamen from laying down on the deck in their night watches; and encouraged to amuse themselves with every thing that can render them cheerful and active." Such men as these deserve indeed the name of officers.

The vaccine inoculation has been successfully carried on in the *Pompée* by Mr. Smith; who has just brought to perfect recovery a case of fractured cranium, from the most discouraging and hopeless circumstances.

December 20th. During the few days the *Pompée* remained in Cawsand Bay, one of the men who had been on shore received the small-pox, which did not appear till the ship arrived at Torbay, when the patient was landed at Mr. Bell's hospital.—Dr. Felix also informs me, that a case of small-pox had just appeared in the *Bellisle* sitting at Portsmouth.—From the inquiry which this disease has undergone for the last seven years in the fleet, the surgeons are extremely attentive

to early separation, which has much contracted the ravages of this dreadful infection.

December 24th. A few ships lately arrived from the Squadron off Brest enjoy wonderful health; but the crews are in the utmost want of recruit and respite from duty unprecedentedly severe.

December 30th. The Glory of 98 guns, now in dock, has just imported the small-pox. In the Cambridge guardship numbers have been infected and sent to the hospital.

The Squadron sailed from Torbay; and our noble Commander in Chief fixes his residence at Tor-Abbey. The winter hitherto has been mild, with westerly winds chiefly.

A New Century.

January 1st. 1801.

This day being the first of the Union between Great Britain and Ireland, the new colours were displayed from the ships in harbour.

January 4th. The fleet returned to Torbay.

January 7th. The fleet sailed.

January 10th. The Glory, now refitting in Hamoaze, has, since the end of November, sent upwards of fifty men to the hospital, some in typhus, caught in the filthy stews of Dock, or produced by the poisonous spirits sold there. These cases exhibit in afflicting but real characters the account which I some time ago sent to the Admiralty, of the increased numbers of public houses opened in Plymouth Dock, perhaps at this moment

moment under the most degraded police of any town in Europe. If any future historian may wish to search for the causes that have spread so turbulent a spirit among our seamen, he will find them best in these haunts of drunkenness and vice. What avail medical skill, or an investigation of remote and occasional causes of disease, while such polluted sources of destruction to health are overlooked.

The injury to health in this instance is also aggravated, by a ninety gun ship's company being crammed into a hulk of sixty guns, made still more crowded by an immense number of women.

January 15th. The cases of phthisis are less numerous than they were a few months ago; but many curious instances of hypochondriasis and hysteria still appear. Some of these have exhibited a very singular kind of urine like purulent matter, or mucus, and at other times like viscid bile.

January 20th. The fleet returned to port, and sailed again next day.

Instead of the hospital at Torbay being a place of rest and comfort for the sick and hurt of the fleet, it appears that the system of service, as conducted there, has added much to their affliction. After remaining on shore for a few days, they are sometimes sent round to Haslar or Plymouth hospital, in unfavourable weather.

About this time V. A. Lord Nelson, complained of a violent ophthalmia in his only eye, with a membranous substance seemingly spreading fast over the pupil. His Lordship's flag was just hoisted in the San Josef. All persons round felt for his Lordship's indisposition, and many quack collyria were recommended and sent to him. I prescribed a dark room, and bathing the eye every hour with cold spring water, which in 24
hours

hours had a surprizing effect, and in two days more the inflammation was entirely gone. Cold spring water I have long thought the best eye-water.

January 24. At this time I made some applications to Sir Thomas Troubridge, Captain of the Fleet on the subject of public surveys at the hospitals; pointed out some important alterations, related the fever on board the *Glory*, and the effect which the licentious follies of Plymouth Dock had in producing it, and requested attention to the filthy condition of the hulks, where the crews of ships are kept while in dock.

February 3d. Accounts received that a squadron of French ships of the line had escaped from Brest during thick weather, and when the blockading ships were blown off by severe gales.

February 4th. The fleet returned to Torbay; and sailed next day.

February 8th. The *Unicorn* has imported the small-pox. The first case confluent, supposed to have been brought on board by some of the women.

A fever, not unlike what appeared in the *Glory*, has affected some of the *Edgar's* people. The hulk in which these people live at present, in point of filth exceeds any thing of the kind I have seen.

The following letter, on the subject of QUARANTINE, was forwarded at this time to the Admiralty:

“ Sir,

Plymouth Dock,
Feb. 9, 1801.

“ The surgeon of the *Oiseau* having, by letter, represented to me the state of health in that frigate, with two hundred French prisoners on board, and many of these severely wounded; and from
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the circumstance of having boarded a Swede from Valencia, she has been subjected to quarantine at this port *, which precludes me from visiting her.

“ So many instances of this kind have come under my observation during the war, that it becomes incumbent on me to offer some remarks on the subject, in hopes, at least, that the naval department may be relieved, from what I conceive to be a mistaken form of police, in insuring public safety. The regulations of quarantine, as far as medical authorities have prescribed them, appear to me, more calculated to raise false and unnecessary fears in society, than to subdue them when they become real. This was strongly exemplified some months ago in the Thames, and in the whole history of the Boulam fever at the beginning of the war. There is no fact in medicine more clearly demonstrated, than the *yellow fever being incapable of existing in our latitudes*. In a thousand instances ships have left the W. India islands with the fever on board, and as they came homewards, the disease has uniformly been extinguished. But many of them have suffered great affliction, in consequence of waiting forms of office, to land people debilitated by tropical diseases. The dread of contagion is now become one of the greatest evils of human life in this country; this dread has been magnified, by extending quarantine to W. Indiamen, and kept alive by the credulous nervous sensibility of the English character.

“ (Then follows our account of the Hankey, the Boulam vessel, first proscribed. Vide Yellow Fever, vol. i. and art. Thought on Plague in this volume.)

*. A fatal epidemic fever had been raging in Spain a few months ago, certainly answering to the nature of the plague.

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“ But has not the spirit of quarantine laws been weakened by lessening the solemnity of their execution? Can there be any dignity attached to the form, that empowers a custom-house officer and his boat’s crew, utterly ignorant of the business in which they are employed, to exact obedience from one of his Majesty’s ships of war? The very ship now submitting to this form, has been a week in Torbay, and had communication with half of the fleet. Such a circumstance cannot be calculated to impress either officer or man on board, with a just sense of the importance of bills of health, and in the event of imminent danger, the subject might be treated with neglect and indifference. Should not therefore some medical authority on the spot be established to decide on the validity of health.”

The copy of this letter was, by order of their Lordships, sent to the Lords of Council, but nothing was effected.—I suspect that the medical opinions which are consulted by the Lords of Council, are of the nervous class, easily frightened, and easily frighten others. Yet it is surprizing, that a physician of his Majesty’s fleet is not authorized by his office, to give certificates of health to any vessel whatever.

February 10th. By a report from Mr. M’Arthur of the Naiad at sea, it appears that small-pox and typhus have been carried from port by that frigate. Both diseases were brought on board by men from the Cambridge receiving ship; like her consort, the Royal Billy, at Spithead, the frequent and copious source of infection. (Vide Mr. M’Arthur’s account, Contagion.)

February

February 13th. The Captain, now refitting, has imported the small-pox, by a seaman on leave, going into a house in Dock, where children were ill of that disease.

February 15th. Very severe frost for a week past, and now continues, with cold easterly winds. —The winter before had been mild and open, vegetation being scarcely checked.

February 17th. The small-pox appeared this morning in the Edgar, in a man who caught the infection in one of the public houses on shore.

Sir Thomas Troubridge, Captain of the Fleet, informs me, that my last complaint against the gin-shops of Plymouth Dock was sent from the Admiralty to the Duke of Portland's office, with their Lordships support on the occasion.

February 19th. The Nymph just arrived from off Brest, had carried to sea the small-pox. By uncommon exertions, on the part of Mr. Grey, the surgeon, the disease spread no farther.

February 22d. Cases of phthisis still appear in different ships.

On account of the variolous infection having been so frequently of late communicated to the ships; and from the supine and tardy prosecution of the new inoculation, I have again made representations on both subjects. Although this business

was rather ungraciously taken out of my hands; where so many human lives are concerned, ceremony must be waved. The casual small-pox were at this time raging in the town of Plymouth Dock with great mortality.—A copy of this letter was sent by Admiralty order to the Sick and Hurt Board, where I suppose it met its grave, for it was never more heard off.

In this communication I remarked, that his Majesty's ships going abroad, were by far the best means for extending the benefit of the new inoculation to the colonies; as a succession of cases might be kept up, so as to carry the matter in a recent state to the most distant settlement.

February 23d. Mr. Turnbull, of the Venerable, just returned from sea, mentions the appearance of an ulcer, very much resembling that of the Terrible three years ago. Every slight scratch or wound ulcerated, and swellings of the axilla and inguen were almost constant followers. Some of these tumours suppurated, and ulcerated like the original sore. Some febrile indisposition attended, but not to be compared to that of the malignant ulcer. Mr. Turnbull was very successful in the treatment. The debility was considerable, and he supported the patient well: the local application, besides the usual dressings, was Pulv. Cinchonæ, which he learned from Mr. Mant of the Terrible. No case of this kind was sent out of the ship for cure: the Venerable, on the whole, was the most healthy ship of the fleet.

February

February 28th. Admiral the Honourable W. Cornwallis hoisted his flag in the Ville de Paris: Earl St. Vincent being promoted to the Admiralty!!!

The Achille, in one month's absence from port, has buried five men in typhus. Ten days of severe frost, with hard gales, have most sensibly affected some of our ships. The fatigue of duty for the last eight months, has so much reduced the strength of the seamen, that they are unable to bear the weather as heretofore. But I suspect this fever was carried from the Cambridge. (See Mr. M'Laughlan's Report, Contagion.)

The fever in the Naiad, by great attention, is subdued; and also the small-pox.

March 1st. Mr. M'Grath, of the Ruffel, has begun the Jennerian inoculation with great spirit.

The surgeon of the Indefatigable complains of the debilitated condition of that ship's company.

March 3d. A fever resembling that of the Glory and Edgar, has appeared in the Magnificent, now refitting, and three have already died. It has originated from infection caught in the public houses of Dock, and rendered active by the cold filthy lodgings of a hulk, and the use of spiritous liquors.

March 10th. A typhus fever has prevailed for some weeks in the flag ship Mars, of Admiral Thornborough, brought on board at sea, by a party of men, who came passengers in the Immortalite from the Cambridge; from the Immortalite were sent to the Magnificent, from thence to the

Achille, and lastly, to the Mars. Four have died at sea. (Vide Art. Contagion.)

March 13th. Phthical cases still appear.—The Royal Sovereign, this day, sends ten of this disease on shore. Four of these in the last stage. Some of these men had lost relations in a similar complaint, from which it may be inferred, that they are constitutionally predisposed, and the disease called into action by the long winter duty and exposure to cold, &c.

This ship had been almost constantly at sea for the last fourteen months: scurvy was now general, and numbers were taking lemon juice in the usual quantity from Mr. Smithers, independent of the general allowance.

March 14th. During the last cruize, some deaths have happened in the Princess Royal from pneumonia. But three cases left in the Sick Berth, though convalescent, exhibit remains of typhoid debility, rather than that which succeeds pulmonic inflammation. A seaman was also shewn to me, who was reported to be in a state of ebriety, but appeared to me in the delirium of typhus. He died next day. I visited a young gentleman in the last stage of typhus, seemingly in a dangerous state, with an intermitting pulse. I afterwards learnt that he died at the hospital.

A fever of the low kind has infested the Urania off Brest, in which two died.—Scurvy was also common in this ten weeks' cruize, notwithstanding the daily ounce of lemon juice.

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The Terrible, after fourteen weeks at sea, complains only of debility, and needs recruit.

Mr. Mant says, " I have found very beneficial effects from the *affusion* of cold water in three cases of typhus fever, which, though they ran out the usual time, yet were much mitigated by its use. One is now recovered, and the others convalescent.

" I have had a case of happy recovery from drowning, being a long time in the water in a gale of wind. A rope was made fast to him a-long-side; but in consequence of the heavy sea, he was nearly an hour in this situation, frequently dashing against the ship's side. It was *three hours and twenty minutes* before there were the smallest signs of life, which was at last restored."

*A NAVAL MEDAL presented to Dr. JENNER,
Author of the Vaccine Inoculation.*

Sir,

Plymouth Dock, Feb. 20, 1801.

You are perhaps no stranger to the information of the New Inoculation being directed throughout the Navy by Admiralty authority. The inquiries which had been instituted in the Channel for the last seven years, had called the attention of the surgeons, to guard against the introduction of the small-pox among seamen; which, in more than a hundred instances during that time, had been imported by ships; twenty of these have occurred within the last six months, in this fleet only. Amidst subjects so ill prepared for its reception, more than the common proportion of deaths has

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been

been the consequence.—Such was the tenor of our researches when Dr. Jenner announced to the world the vaccine inoculation as a *preservative* against variolous infection. *Tandem venias augur Apollo.*

As far as the New Practice has extended among us, it has been followed with the usual success; and so mild that the subjects of it have not been considered in the number of sick on the list. But the value of conducting the vaccine inoculation with spirit and perseverance throughout the navy, may be best estimated by calculating the seamen at ten thousand who are unconscious of having had the small-pox: in this proportion I am justified by the experience of musters in infected ships. How dignified the councils of any nation, that by timely precaution shall ward off so much probable human misery!

The medical officers have not been passive spectators of an event so singular in the history of animated Nature; an event which the philosopher will contemplate with wonder, and the friend of his species view with exultation! Although secluded by their office from the earliest communication with the progress of medical science, what relates to the vaccine disease has been earnestly sought after; and the whole of your opinions and practice have excited uncommon attention. I am therefore requested to present you, in the name of these gentlemen, with a GOLD MEDAL, and suitable devices, at once expressive of *their sentiments in favour of the New Inoculation, and to commemorate its introduction into this department of public service.* With the more pleasure I comply with the wishes of my worthy associates, as I am confident that no token of respect bestowed on a benefactor of the human race, was ever conferred
from

from more honourable or disinterested motives. It will not be the less acceptable to Dr. Jenner, that it comes from a body of officers, connected by the exercise of their profession with the most brilliant period of our naval annals. As far as their authority has influence, they thus offer their warmest support to the cause. The progress of truth is sometimes slow, but always certain. It is not in the nature of medical investigation long to resist the evidence of facts; and it is far less the province of medicine to check the current of charitable feelings, or to circumscribe the duties of benevolence. We must therefore hope, that while the liberal discussion it has undergone shall secure the suffrage of the enlightened mind, the love of offspring will confirm its favourable reception throughout domestic life.

Accept, Sir, in the name of my naval friends, my hearty congratulations on the honours that await your professional engagements. May the present age have the justice and public spirit to remunerate what posterity will be glad to appreciate: may the medical faculty have virtue and candour sufficient to acknowledge the value of your labours: may your example be a model to the rising members of that profession which you adorn; and, may you be blessed with length of days to see your discoveries the means of abridging and preventing disease, pain, and deformity throughout the habitable globe.

Inclosed I have the honour to transmit a list of the medical gentlemen, and their stations in his Majesty's naval service.—I beg, with all personal esteem and regard, to subscribe myself, Sir,

Your faithful, humble servant,

T. TROTTER.

Dr. JENNER.

NAVAL SUBSCRIBERS *to the* JENNERIAN MEDAL.
1801.

Dr. Thomas Trotter, Physician to the Fleet.

NAMES.		SHIPS.
William Hill, surgeon	-	Edgar
James Veitch	-	Doris
F. M. Chevers	-	Robust
Wm. Robertson	-	Garland
W. Hamilton	-	Clyde
Jas. M'Intosh	-	Galatea
R. Allan	-	Oiseau
Alex. Denmark	-	Viper
Thos. Smith	-	Nimrod
J. Embling	-	Hospital, Torbay
Richard Hardwicke	-	Magnificent
S. Hammick jun.	-	Royal Hospital
Richard Lloyd,	-	Barfleur
An admirer of Vaccinia		
Thos. Stewart	-	Prince Frederick
Dr. Thos. Kein	-	Royal George
B. Keirnan	-	Prince
B. M'Laughlan	-	Achille
Hen. Watson	-	Cambridge
Wm. Musgrave	-	Triton
Jas. Farquhar	-	Captain
Chas. Cooke	-	Penguin
Hugh Hughes	-	Marlborough
Thos. Thong	-	Renard
R. Cuming	-	Leyden
Dr. Edward Boys	-	Hospital, Deal
Wm. M'Curdy	-	Prince George
Michl. M'Cormick	-	Immortalite
Wm. M'Donald	-	Montague
Val. Duke	-	Sprightly
Dr. J. Snipe	-	Hospital, Yarmouth
		P. Cullen

OCURRENCES RELATING TO HEALTH. 119

NAMES.	SHIPS.
P. Cullen	Agamemnon
Sam. Allen	Albion
Wm. Oastler	Spitfire
S. Hammick, sen.	Royal Hospital
Geo. M'Grath	Ruffel
Richard Burke	Acteon
Wm. Dingwall	Nemesis
John Leggat	Overyffel
James Scott	Audacious
Andrew Leslie	Hazard
John Boone	Solebay
David Cowan	Eurydice
D. S. M'Carthy	Beaulieu
W. Nepecker	Juste
James Nutt	Cæsar
W. B. Smith	Pompée
R. Allen	Orion
A. L. Jack	Espeigle
John Lind	Majestic
S. Fowell	Spider
Wm. M'Mullan	Canada
J. Tosh	Triumph
T. Willes	Centaur
James Young	Lion
D. W. Bell	Indefatigable
Dr. Charles Cudlip	Mill Prison
Geo. Bellamy	Spencer
James Milligan	Malta
John Bury	Unicorn
Wm. Gregory	Thames
John Landlefs	Hydra
Thos. Quin	Loire
Wm. Gray	Nymphe
John Morgan	Amelia
D. Fleming	Impetueux
R. Carruthers	Wareham
John Home	Suffisante

NAMES.		SHIPS.
Geo. Turnbull	-	Venerable
Richard Thompson	-	Childers
Dr. M. Felix	-	Neptune
David M'Arthur	-	Naiad
Thos. Simpson	-	Fisgard
Wm. Beatty	-	Alcmene
Ar. French	-	Scout
P. Blair	-	Mars
H. Perkin	-	Uranie
B. F. Outram	-	Superb
Thos. Mant	-	Terrible
Jer. Smithers	-	Royal Sovereign
John Allen	-	Formidable
Thos. Watherston	-	Temeraire
Ralph Palin	-	Sylph
Morg. Morgan	-	Mill Prison
Frs. Brett	-	Dragon
Rob. Fairfoul	-	Cleopatra
Dr. Douglas Whyte	-	Constantinople
Mr. John Bell	-	Pelican



Explanation
Of the Naval Medal presented by the Medical Officers to Dr. Jenner 1801.
 Apollo the God of Physic presenting a young Sailor just recovered from the Vaccine Inoculation to
 Britannia who in return extends a Civic Crown on which is written the word Jenner. On the reverse
 an Anchor with, Letters expressing the reign of George the Third and the Naval Administration
 of Earl Spencer.

Dr. JENNER's Answer.

To Dr. TROTTER,

Sir,

I beg you to accept my sincere acknowledgements for the distinguished honour conferred upon me, in your presenting me with a GOLD MEDAL, in the name of the medical officers of his Majesty's Navy.

From no quarter could such a mark of attention for the endeavours I have exerted, in pointing out the means of annihilating the small-pox, have been received with greater pride, or with warmer emotions of gratitude; since there is no situation occupied by medical men where the value of the discovery of vaccine inoculation could be more justly appreciated.

If any thing could enhance the estimation in which I shall ever hold such a mark of distinction, conferred by such respectable characters, it is, that it has been presented to me, by a man who has cultivated the most useful science with so much success, and introduced so many valuable improvements into the navy of Great Britain.

I have the honour to subscribe myself,

With great regard,

Sir,

Your much obliged,

and obedient humble servant,

(Signed) EDW. JENNER.

London, 18th April,
1801.

March 16th. The following remarks come from Mr. Outram of the Boadicea, arranged in his usual
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neat and systematic style. This frigate, commanded till now by Captain Keats, was under a discipline and order of the first class, and eminently calculated to preserve health, or recover it.

“ The Boadicea, after a cruize of more than thirteen weeks off Abrevarac, in the coldest and most unfavourable season of the year, returns to port in the highest state of health.

“ In the middle of January we had a few severe pulmonic and pleuritic affections; for which, in the early stages, the lancet was used with freedom and advantage, together with infusion of linseed with nitre, blisters, and vomits, with squills. In the latter stages gum ammoniac, asafœtida, sometimes myrrh and the camphorated tincture of opium at bed-time.

“ Among the venereal patients, several buboes unavoidably suppurated, and have done well.

“ Abscesses in the lymphatic glands of the arm-pit and groin have been very frequent, and were often the consequence of the most trifling ulcerations in the extremities. Three of these having suppurated, were found remarkably difficult to cure. They do better when allowed to burst of themselves, than when opened with the lancet. But when very indolent, argent. nitrat. was used with advantage, to effect an opening in the most depending part of the tumour.

“ One of the worm patients, remarkable for an hypochondriacal disposition, discharged several jointed tape worms more than two yards in length. In this case, large doses of colomel and aloes, and afterwards the filings of iron, were the means of effecting a cure.

“ Although we have had no case of real scurvy during the cruize, which disease has doubtless been prevented, by the almost daily admixture

“ of

“ of lemon juice and sugar with the grog. Yet we
 “ have had several indications lately, of the neces-
 “ sity for the refreshments and recreations of the
 “ harbour, which will appear sufficiently obvious,
 “ when it is considered that the Boadicea has
 “ been only *fifteen days in port* these nine
 “ months past, five of which were passed in the
 “ Tagus.”

March 16th. The Admiralty have abolished the private surveys at the hospitals for consumptive cases, from representation, as they were deemed inconsistent with the spirit of naval service.

I have also obtained a commodious decked vessel for carrying our sick from Cawsand Bay to the hospital.—The best period for obtaining favours from Ministers, is when they first come into power.

Some deaths have happened in the Barfleur from a prevailing fever, but its nature not accurately known.

March 30th. The continuance of westerly winds, which prevent the fleet from sailing, have contributed to the recruit of the seamen, by fresh meat and vegetables, which they greatly wanted.

April 1st. This day I visited the Cambridge, by desire of Captain Lane. There seems to have been much cause for blame before he took the command, in the medical arrangements: no regular times for visiting the sick having been attended to, by which neglect, no knowledge was taken of
 sickly.

sickly supernumeraries. The Cambridge had few on board besides her own men; but I pointed out some that were sent to the slop ship to be clothed. In all respects Captain Lane's orders were favourable to health.

April 26th. Cold easterly winds have lately been prevalent. An obstinate ulcer, somewhat resembling the sloughing sore of our former volume, has prevailed on board the Amethyst, and in two cases proved fatal. (See Malig. Ulcer.)

May. Some of the ships lately returned to port have much scurvy. The Resolution, Captain Gardner, after twelve weeks off Brest, in the worst weather, is overrun with this disease, but not an object for the hospital on board.—The Bellisle is also considerably affected with scurvy.

Large supplies of vegetables, and bullocks, for the first time, are now sent to the fleet off Brest.

During last month a serious typhus fever has prevailed in the Princess Royal, of which seven have died. This fever is traced to men sent in a filthy condition, and half starved, from the Cambridge. The ports of Liverpool and Bristol are the fruitful sources of these infections. The accommodations in the tenders are of the worst description, and the new raised men chiefly sleep along the deck, the greater part have no beds.

The surgeon pays due tribute to R. Admiral Sir E. Gower, Captain Atkins, and the officers, for their ready acquiescence in every thing suggested to extirpate this fatal contagion; and it declined before the end of April.—The whole deaths that happened were in men under thirty years of age.

—We

—We consider the bloom of life, while the nervous system possesses the most acute sensation, to be the period chiefly liable to febrile movements.

Besides thirty-seven fevers in this month, thirty-eight more are mentioned under the term, “*inirritative debility*,” in the language of Dr. Darwin, but to be considered nothing else but slighter instances of typhoid infection, and commonly occurring towards the decline of the disease in a ship. (See Contagion and Typhus.)

May 9th. Some severe cases of phthisis are this day sent on shore from the Atlas; they all affirm, that they had lost near relations in the same complaint. These cases do not differ from the general history of this mortal distemper as it has prevailed in the fleet for the last twelve months. I am, however, in hopes that it will soon decline, the mode of duty under Admirable Cornwallis is less harassing, and longer time is given for the ships to refit in port.

Pulmonic and catarrhal complaints have been prevalent, as usual in variable weather.

May 17th. A typhus, of which nine have died, in the course of an eight weeks’ cruize, has prevailed in the Magnificent.—While this ship was refitting, a similar fever was observed, partly to be attributed to irregularities, or infection acquired in the filthy stews of Plymouth Dock. But there is also cause for suspicion, that a new contagion was ingrafted on the old stock, by men brought from the Cambridge, almost naked, emaciated and dirty, that had been received from the out-ports.

The

The *Majestic*, after burying eleven people at sea, of a fever brought from the *Cambridge*, was ordered to Torbay to purify, with two hundred sick on board. This ship had been just commissioned, and suffered from the want of medical attendance; the surgeon being left ill at Plymouth. Upwards of fifty bad cases were landed at Mr. Ball's hospital, where himself, with nurses and others were infected with the same fever. It was some time before the *Majestic* was clear, notwithstanding the removal of the worst people.

This was a very fit period to have made examples of the regulating officers at Liverpool and Bristol, for the unpardonable neglect of duty at these ports, in thus propagating diseases that endangered the health of the whole Channel fleet.

May 20th. Near one hundred fat bullocks, with large supplies of vegetables, have in the course of the week been sent to sea; every ship that sails, now carries as many as convenient.

Ten days are now allowed to refit, and to recruit the strength of the people.

May 30th. Two more of our frigates having unnecessarily been put under quarantine, from having boarded vessels at sea, which deprives them of much of the time that ought to be spent in recruiting and recreating the people, I have again addressed the Admiralty on the subject.—The custom-house officers have double pay, while employed on this duty, so that they look after it most eagerly.

The

The Mars, while refitting lately, received the small-pox; as did the Glory some time ago, a second time.

May 3d. Four ships of the line, the Spencer, Pompée, Juste, and Courageux, part of a squadron that sailed with Sir Robert Calder in February, in pursuit of a squadron that escaped from Brest, after touching at all the West India Islands, have returned in the most perfect health.

Nine very malignant cases of ulcer have been sent from the San Josef at sea, similar in appearance to our former subject, the greater part of these men must lose their limbs in consequence. (Vide Malignant Ulcer.)

The fever in the Princess Royal, after eleven deaths, is nearly extinguished.—Such are the effects of abuse in the port duty!

A fever is now prevailing on board the Belle-île at sea.

June 10th. A boy belonging to the Juste, has met with the small-pox, somewhere in Dock. By timely separation, which is now minutely attended to, the disease spread no farther.—Mr. Nepecher began the vaccine inoculation.

June 12th. The fleet now off Brest, in point of health, has already received much benefit from the live stock and vegetables sent to sea. The increased vigour of the people is evident in their looks.

The Robust, just arrived from a four months cruize off Rochfort, has suffered severely from a typhus fever, of which nine have died. This ship has been most cruelly put under quarantine, from having boarded at sea a vessel from the Levant,
more

more than four months ago. Such a stretch of the quarantine laws is repugnant to all modern ideas of medical jurisprudence. I have therefore again attempted to call the pity of the Admiralty, to what our ships experience after such long cruizes from these restrictions. Strange to tell, that our fleets and armies are now traversing the very spot that is said to give birth to the plague with impunity, while in England the forms of quarantine are depriving our seamen of the common comforts of life.

A very general disposition to scurvy at this time prevails in the *Robust*, having had no refreshment since leaving port.

June 16th. Mr. Morgan of the *Amelia*, returned from a long cruize, describes a fever of the mild remittant typhoid type, which appeared in the month of March, among a set of boys who came from the Cambridge the day before the frigate sailed. They were all young country lads, very ill clothed and dirty. By great attention, the infection was soon suppressed. We thus find that every surgeon gives the same account of the people who come from the receiving ship. Wherever they are sent, fever follows them.

In April this frigate received the measles from a black man taken out of a *Dane*, from the *Loire*; in France, where the disease prevailed. A child of sixteen months died in consequence.

The board of Admiralty has ordered that private sick quarters for officers are to be discontinued

tinued. But I lament to say, that no directions have been given to fit up suitable apartments within the Royal Hospital in lieu. This certainly could be done for a trifle.

The fleet being now fully supplied at sea with refreshments, enjoy health (except where infection has been received) equal to the summer of 1796. The excesses of the harbour are thus prevented, and the trade of the gin-shops has so much declined, that some have failed entirely and shut up. Singular stratagems had lately been devised for carrying liquor into ships; for, in proportion to the vigilance of officers, cunning and invention are set to work. Vessels in the form and dress of a sugar loaf, and other articles, the small guts of animals, and bladders formed into the most fantastical shapes, and covered with silk or cotton, to be concealed in different parts of the female dress, have been all detected.

Sir Edward Pellew encourages his squadron off Rochfort, to employ every method for catching fish, which has much retarded the appearance of scurvy in his own ship, and others.—What a pity that this excellent practice is not general in the fleet, when there is nothing else for employment. Lord Duncan, in the North Sea, has been always remarkable for his indulgence in this duty.

The Montague, another of Sir Robert Calder's squadron, has arrived, having remained only eighteen

teen hours at Martinique, yet in that short time the dysentery was received, and on the passage home sixteen men, in the prime of life, died of that disease.

In May last, the small-pox appeared in the Atlas, two young children died; but by the dexterous management of the surgeon, only one seaman received the infection, who was confined in the large cabin, and recovered.

The ships which now arrive in port are so healthy, as to send no patients to the hospital. Those that have shared duly of the refreshments, may be justly said to have added a third more strength to what they possessed before.

Mr. Cornfoot of the Diamond, reports the small-pox to have appeared during their late cruize off Madeira: one death in the confluent kind happened out of four that received the infection.

In the same frigate, and about the same time, in January, a typhus made its appearance, which extended to forty cases, with one death. It was subdued by the usual means, probably much assisted by the mild weather of the latitude of Madeira and Canary Islands, where the Diamond was cruising. Mr. Cornfoot does not mention the source of either contagion.

July 29th. The Prince George, Prince, and Captain, are in perfect health; the two last send each two cases of phthisis on shore.

In

In addition to bullocks and vegetables, a quantity of sheep have lately been sent to sea for the use of the sick. These are benevolent attentions, and deserve commendation.

July 30th. The ulcers rather decline in the San Josef; but some signs of the same have appeared again in the Prince of Wales.

During the last cruize, and soon after leaving port, the small-pox appeared in the Prince in two people; they were immediately confined to the cabin, and the disease stopped.—We thus see how widely this infection has extended, and how necessary it is to keep surgeons and officers on their guard.

August. A few cases of ulcer on board the Triumph, shew some tendency to the nature of what was in that ship four years ago.

The Uranie has had, as usual, much scurvy, in a cruize of five months; twenty-six cases were most inveterate: yet all this happened during the use of the sherbet, and in summer weather.

The small-pox also appeared soon after leaving port, in two confluent cases; due precaution confined the disease from extending.

My letters from the Squadron off Rochfort, complain of the want of meat and vegetables, while the fleet off Brest have abundance. Some of these ships have been twenty-two weeks at sea, but the fine season, fresh fish, and good discipline, ward off scurvy during so long a cruize.

August 20th. In the Oiseau, Mr. R. Allen, met with some severe cases of pneumonia, since last May, when the frigate left port. He makes the following remark on blood-letting in this disease: “ I bled with all the freedom of a French practitioner, paying little regard to the state of the pulse, but directing my principal aim to the re-

“ removal of the pain of the side, and difficulty of
 “ breathing. In one instance the patient lost
 “ seventy-one ounces of blood; and in another,
 “ sixty-six, in the two first days of the disease.
 “ Every bleeding was uniformly followed by a
 “ subsiding of the pulse, a temporary remission of
 “ pain, and a general alleviation of symptoms.
 “ And, I apprehend, in this dangerous disease, it
 “ is only by an early, bold, and decided use of the
 “ lancet, that we are ever to save our patient from
 “ suffocation, or an equal fatal termination.”

Although Mr. Allen here inculcates a bold and
 decisive practice, yet his precepts are to be re-
 ceived with some qualifications. The employment
 of other means for subduing inflammation ought to
 accompany bleeding; and if they are promptly
 and earnestly followed up, a much smaller quantity
 of blood taken, will then answer the purpose. Cool
 air and cold drink, keeping the body naked, giving
 the citric acid diluted in large quantity, or its best
 substitute, acetous acid, with purges, such as pulv.
 scammon. C. cum calomel, that act quickly, and
 produce frequent and large evacuations: these
 may be all exhibited with safety for the first three
 days, and often much longer. The relief from
 pain and stricture of the breast, by V. S. is not
 always to be considered as a progress towards cure,
 even in the best marked case of pneumonia, for
 large depletion of the vital fluid is often succeeded
 by want of sensibility. The sudden evacuation of
 a large quantity of blood, is also apt to produce
 effusion into the bronchiæ, and consequently suffo-
 cation: but at all times, when carried too far, there
 is a very tardy convalescence.

The same ingenious gentleman makes the fol-
 lowing remark on his treatment of a prevailing
 ophthalmia: “ I have derived very manifest ad-
 “ vantage from small doses of mercury. When
 “ the

“ the inflammation was so violent as to resist
 “ blood-letting, blistering, purging, and every
 “ collyrium applied, I have found it yield readily
 “ to that remedy, given in such doses, as gently to
 “ affect the mouth, although there was no reason
 “ to believe the existence of lues venerea, or
 “ scrophula in the habit.” Mr. Allen did not try
 the external use of very cold water; cold lavation
 of the head and face is also an excellent remedy.

The malignant ulcer has now so much declined on board the San Josef, that on her arrival in port, only three cases are deemed objects for the hospital, and these are likely to be tedious in the cure from carious bone.

It does not appear that this ulcer was so rapid in its progress, or attended by such severe febrile symptoms as were observed in the Queen Charlotte, in 1787, and other ships; nor was it succeeded by such large sloughing of the muscular parts. It has not extended in all beyond sixty cases, ten of these have been sent on shore, and the remainder cured on board by the indefatigable attention of Dr. Felix, to whose abilities and industry Captain Wolfeley pays due regard.

August 28th. The Windsor Castle, the flagship of Sir Andrew Mitchell, Resolution, and Canada, just come from sea, have all suffered considerably from scurvy, by not receiving the due proportion of fresh beef and vegetables with the other ships of the line. The Windsor Castle and Canada were in the advanced squadron, and the Resolution has been employed in Quiberon Bay. Some cases of phthisis have been sent on shore

from each of these ships; but they are of six or eight months standing. The livid hue of the scorbutic diathesis, is very perceptible in the countenance of all these people, notwithstanding the fine and equal temperature of the season.—Let it be still remembered, that the sherbet was used at sea.

September 3d. Three cases of phthisis, of long standing, in the Barfleur, are objects for the hospital.

The Centaur, one of the Rochfort Squadron, has had a number of scorbutic cases, but not so severe as to disable them from duty, during eighteen weeks cruize, having had no vegetables during that time, but plenty of fresh fish.—During this long absence from port, the sick list felt the full value of the good things in the sick mess, which have rendered the name of their late captain dear to the naval service of the country, the example of which was now seen by others:

About this time an advertisement appeared in the newspapers, calling upon such navy surgeons as were retired, to transmit their address to the Sick and Hurt office without loss of time, under penalty of being scratched off the list. It also hinted at these gentlemen making service subservient to their private views, after completing their time of being entitled to half pay.

I suspect that the terms of this call had a very discouraging effect on the minds of young men, who might enter the navy as surgeons' mates, particularly those of better education, of whom not less than three hundred and eighty were wanted at this time, to give the ships in commission their full

full complement.—Yet such is the language of office to this ill-fated corps !——

September 11th. Arrived the Orion, having been six months at sea. Five cases of typhus proved fatal during the cruize, the same disease which infested the ship while sitting in February. A number of severe cases of scurvy appeared latterly; forty-two of which were incapable for duty; few of the good things, it seems, had been forwarded to the Rochfort squadron. The Orion being lately commissioned, with many raw men debilitated by fever, suffered from scurvy, as a consequence.

September 12th. Arrived the Belleisle, having had eleven deaths from typhus. (Vide article Contagion and Typhus.) From having shared fully of the fresh meat and vegetables, the crew of this ship are high in health and strength.

September 18th. In the last month twelve cases of fever occurred in the Amelia, two of which were fatal. Mr. Morgan could not account for the production of this typhus; it was contracted in its extent, by the usual precautions, although it exhibited symptoms of considerable malignity.

The frigates lately returned from sea continue in their usual good health; but the whole are reduced in muscular strength, and require much refreshment.

September 22d. Received by the Magnificent, Mr. Fleming's Report of Health in the Impetueux for six months off Rochfort, to which I have assigned an article by itself, and refer the reader to it.

The Magnificent's people are generally much disposed to scurvy.

It was mentioned in a former part of these occurrences, that the Lords of Admiralty, had transmitted copies of my letters on the numerous public houses of Plymouth Dock, and the effect which they had on the health of the seamen, to the Duke of Portland's office, with a request for his Grace's attention to their contents.

This grievance to public service seems to have originated with some avaricious brewers or spirit-dealers and distillers, who had interest sufficient to lay hold of an immense number of public houses that obtained licences from the passive compliance of some neighbouring magistrates. A new mode of getting custom was observed by the publicans, who received into their houses all the unfortunate women, to the number of some thousands. These wretches flock to the naval sea-ports for the wages of prostitution, after being debauched in the interior of the country by the idle and dissolute soldiery. Thus, the populous town of Dock, was apparently converted into a huge brothel. The inhabitants themselves, eager in the pursuit of those profits which war produces, beheld with tame indifference their neighbourhood subjected as it were, to legalize prostitution; nor once thought what a dreadful example was exhibited in the face of open day, to contaminate the manners of the rising generation. The task of magistracy, perhaps never became so ignominious, as in disannulling what itself had created: for the Duke of Portland had ordered the houses to be reduced to one hundred, so that two hundred

dred were shut up!—The respectable part of the community acknowledged the obligations they lay under to a public officer, and a stranger, for correcting the police of their town.

This business must be remembered as a great triumph to the naval service of the country. It has called the attention of the government to watch the proceedings of vitiated magistracy, and to protect, by wholesome regulations, a body of men, who, when from under the discipline and vigilance of their officers, are no better than inconsiderate children. Their health will by these means be preserved; they will escape the snares of the disaffected and designing, and their moral conduct will have a chance to be improved.

September. There has been hitherto no severe weather. Catarrhs and complaints of the breast, bear no proportion to what they did last year, not to be attributed to a finer season, but rather to milder duty at sea, and in refitting, which less exposes the body to vicissitudes of weather, or to be warmed or chilled by labour.

The ships of the enemy have never been so completely confined to their own harbours as at this period of the war; for some time past, a prize of any value has scarcely been met with by our cruisers.

September 28th. In consideration of an immense expence having been incurred by the general use of lemon-juice for the last eighteen months, I represented to the Admiralty the good effects to be
be

be expected from a liberal supply of apples, that were now so plenty in Devonshire, and so cheap as to be sold at one shilling and six-pence per hundred. When the lemons of the country were exhausted by the large expenditure, during the prevailing scurvy of 1795, these fruit were substituted with equal success; and with the advantage of being a most grateful change to the seamen. (Vide Vol. I.) The sum which this supply for the whole fleet would cost, I supposed to be about two hundred pounds, which it was easy to demonstrate would save two thousand pounds, by the low price of apples at the time.

The Admiralty, Mr. Nepean informed me, complied with my request, provided the Commissioners of Sick and Hurt should judge it necessary. These gentlemen however thought otherwise, by telling their Lordships that they had provided a great quantity of fine onions at a small price, which, with lemon juice and vegetables, they thought equal to the correction of scurvy.

Such was the opinion of two physicians sitting in a snug corner of Somerset-house, who neither heard the wind blow, or the tempest rage. The fleet off Ushant, it is true, had large supplies for preventing scurvy; but if a saving of public money could be made, by supplying articles of equal efficacy, and more desirable under the circumstances of service, I have no hesitation in saying, it ought to have been done. On inquiry at the agent of the Royal Hospital, I learned that no change had been made in the purchase of onions for the fleet.

Query. How long would these Commissioners of Sick and Hurt like to live on onions and lemon-juice, as preventives of scurvy, in a dreary winter cruise

cruise of twenty weeks, off the black rocks at the entrance of Brest harbour?

While it is my duty to prescribe rules of health to a fleet of brave men, secluded from the comforts of the land, God! of Mercy! remind me of the Christian precept, *to do as I would be done unto!*

October. By order of Admiralty, Rear Admiral Dacres, and myself, are authorized to visit and inspect the prison ships in Hamoaze weekly.

Oct. 4th. Sunday. This day accounts were officially announced of PRELIMINARIES OF PEACE having been signed in London, on Thursday night, by Lord Hawkesbury and M. Otto.

Mr. Caird of the Prince of Wales has, for some months past, had a laborious task with bad ulcers. (See Malignant Ulcer in this Volume.)

October 30th. In the Courageux, just arrived from a twenty weeks cruise off Rochfort, Mr. Clifford has, by indefatigable exertion, established a sick mess, similar to that of the Centaur. (Vide Diet.) The creditor side is already so considerable, as to be equal to fit out with all the usual dainties for a long cruise. Although the war has passed over without obtaining our wishes on this head, yet a few good precedents are valuable.

An uncommon recovery of a fractured cranium has been effected, during this cruise, by Mr. Clifford. The whole parietal bones and scalp were shattered

shattered to pieces. The trephine was applied in four places; the depressed bones were elevated; the scalp united; and the patient restored, after being for eight days totally insensible, with paralysis of the intestinal canal, and other hopeless symptoms.

November 6th. A very large crop of venereal cases, Mr. M'Curdy informs me, (fifty) were the fruit of the last visit to Cawland Bay in the Prince George. This ship, the flag-ship of Sir C. Cotton, has been the healthiest ship of the fleet. They send no men to hospitals.

The fleet is now divided; the Commander in Chief with a few sail in Torbay; a squadron in Ireland, and another said to be gone to the West Indies.

November 10th. Complaints have lately been very general in the fleet, against the necessaries for the sick. The tea and sugar have become so bad, as to be totally unfit for men labouring under sickness. When Earl Howe commanded, amidst other forms of his correct system of duty, was an order that the master, mate, and surgeon of the ship should examine the quality of these necessaries, weigh the whole, and report the defects of both on coming on board, as a check upon the contractor.

November 11th. An uncommonly large number of venereal patients for these times have appeared

peared in the Mars, since the beginning of October.—The cruizes during the late summer were so long, and so few ships in port, that the unfortunate women almost lost their means of subsistence. Hence this variety of wretchedness, by not being able to pay for cure ; and thus the seamen, on returning from sea, are doubly exposed.

About this time the Juste imported the small-pox at Plymouth Dock, of which four died !

A case of the same disease was lately found in the Mars, and sent away in due time.

November 16th. Mr. Perkins of the Uranie, just arrived from sea, complains much of the scorbutic disposition of the frigate's crew. Nineteen cases had attained the worst stage, before the lemon-juice arrested its progress. It is not usual for frigates, or small vessels to suffer so considerably from scurvy ; but the Uranie has had much harassing sea-duty. He adds, " Most of the patients " on the sick list, have large and numerous boils " on various parts of the trunk and extremities ; " much inclined to ulceration, and very difficult " to heal." As the quantity of lemon juice is extended, there is the greater reason to suspect adulteration ; for the expenditure of the last twenty months far exceeds the proportion of fruit imported. Some avaricious contractor was perhaps enriching himself at the expence of the public.

December 8th. A singular instance of good health during a late cruize, occurred in the Excellent, commanded by Captain Stopford. It appears from Mr. Bennet's report, that the Excellent, in the beginning of August, carried to sea thirty-eight cases of the venereal disease ; these, with a case of icterus, and one of mania, were the whole on the list for the month. In September all the venereals of the preceding month were discharged cured ;

cured; and in the course of this month one accident, and one case of pneumonia, with six new venereals, composed the whole list, and were cured within the month. The only cases which were admitted into the list in October were, *one* of pneumonia, and *one* of lues venerea.—The Excellent, during this uncommon health, was cruising about Quiberon bay; but it is rare to meet with such good health in the boisterous weather of the Channel.

December 30th. Mr. Simpson of the Fisgard, like other surgeons, continues to speak most favourably of Mr. Baynton's method of dressing ulcers. This gentleman's practice was indeed established in the fleet, so early as ten days from the publication of his work, and almost before it was tried any where else.

The same gentleman favours the opinion we have given of nit. acid assisting mercury in some cases of lues, but ineffectual by itself.

February. The fleet in Torbay continues, with very few exceptions, to enjoy the most perfect health. The fatigue of severe sea-duty has been prevented during some hard gales; all scurvy is overcome by the long use of fresh meat and vegetable refreshments; and the exposure to drinking spirituous liquors in a great measure done away by keeping the men on board.

Mr. Burd makes the following remark on the health of the Ville de Paris: " The health of this
" ship during the last twelve months, of which
" time I have been surgeon, has been uncommonly good: there has been occasion to send
" only six men to the hospital. One of these was

“ blind when he joined ; one was overrun with
 “ scrophula ; two were Italians, whose lungs were
 “ affected from blowing wind instruments ; one
 “ hectic of a scrophulous habit, and one with a
 “ gangrened penis, from having forcibly pushed
 “ a bougie through the coats of the urethra. Two
 “ have died on board in that time ; one with
 “ calculi in the ureter ; and the other an infirm
 “ old man, who was subject to habitual cough.”
 What health in a ship containing near 900 men !

Ulcers of an unpleasant nature have appeared
 in the Royal George. See the judicious detail
 of this occurrence, by Mr. M'Donald in the article
 Malignant Ulcer.

Ulcers of the leg have lately been very frequent
 in the Belleisle ; but Mr. M'Arthur only found
 them troublesome, from sympathetic buboes ap-
 pearing in the groin, which often ulcerated.

April 13. The medical staff of the fleet was
 this day discharged by order of Admiralty.—Thus
 terminate the war, and our inquiries !

MEDICINA NAUTICA.

CONTAGION AND TYPHUS.

THESE subjects have not yet lost their importance in Nautical Medicine.—Although occurrences in Channel service still point out the defect of arrangements for securing health; yet we have much reason to congratulate ourselves on the attention which has been paid to our opinions, and the general support which our means of subduing Contagion have met with throughout the Navy. The present Chapter, it is expected, will show what progress this business is making among officers and surgeons.

The spirit of fumigation had arrived at its full height, on the introduction of the Nitrous Vapour, published by a Court physician, countenanced by the Admiralty, and directed by the *Codex Officialis* of the Sick and Hurt Board. But not one of its supporters have yet ventured or deigned to go one step into the inquiry concerning the nature of Contagion, or its chemical attraction for this vapour. The naval department, they were led to believe, would eagerly embrace the practice, on the authorities which accompanied it; but fortunately for the service of the country, it came at a time when the subject of health was beginning a
new

new æra; and when both officers and surgeons doubted the validity of what came in so questionable a shape.

The world has now seen a second Edition of Dr. Smyth's Work; in which he has published some reports of naval surgeons to the Commissioners of Sick and Hurt, on the *supposed* efficacy of this antipestilential Fume. I do not mean, at this stage of the discussion, to criticise those *select* Reports; but I feel most unfeignedly for the reputation of the medical officers, when I behold official documents laid before the public eye in defence of the grossest delusion*. Yet these are all that the Board have produced from seven hundred surgeons, after seven years war! There is one thing for which I give the reporters due credit; attention to cleanliness is a part of their operations. But at the same time I cannot help remarking the passive spirit of these gentlemen, with the fuming pipkins in their hands, that they never asked themselves, what is the chemical nature of this Contagion? does it possess form or substance? how does this vapour act in destroying it? These questions arose so naturally from the employment of fumigation, that it shows as much a want of common curiosity, as it was unphilosophic, not to interest themselves in the business. A disease disappearing, during the time any article of the Materia Medica is used, may receive the

* The Board, under Lord St. Vincent, has given no countenance to this fumigation: indeed, Captain Markham, now at the Admiralty, had seen the futility of this process, as well as all others of the kind, in clearing the Centaur of a typhous contagion off Cadiz: Vide Med. Naut. Vol. II. p. 241. I also understand that an order has been issued to grant no further supply of these articles.

credit of the cure from an ignorant bystander, or a shallow observer; but the man who notes the history of cases; the mind inquiring after truth, must weigh causes and effects; draw conclusions from reasonable premises, and appeal to principles confirmed by experiment and matter of fact only. To say that the nitrous vapour subdues contagion without explaining the manner, is like the fly on the chariot wheel in the fable. It reminds me of a story told to children, that the Great Mogul orders a bell to be rung when he goes to dinner, and conceits that the whole world dines at the same time. In like manner these gentlemen trim their pipkins, and conceit, while the fumes ascend, that whatever is contagious within their reach is annihilated and destroyed.

——— It was great pity, so it was,
 This villainous salt-petre should be digg'd
 Out of the bowels of the harmless earth,
 Which many a good tall fellow had destroy'd
 So cowardly. SHAKESPEAR.

Acron, a physician of Agrigentum, was the first who thought of "*lighting fires, and purifying the air by perfumes,*" to put a stop to the pestilence that ravaged Athens, anno ante Christum 473, so that this species of superstition is of pretty ancient date. Some time ago, I had an intention of writing the history of Fumigation, from Acron's *Perfumery* down to the nitrous vapour of 1796; but I met with so many ludicrous stories of necromancy, exorcism, forcery, and witchcraft, that the subject began to lose all the gravity of a scientific inquiry. It was therefore given up. Some physicians who have more confidence than myself in its divine origin, will probably find themselves called

called upon to explore the tradition of their medical creed.—

Allowing that nitrous gas, or nitrous vapour, as it is called, gives out oxygene to the atmosphere, let me ask its advocates what becomes of the azote it was previously combined with? In short, examine strictly all the authorities on which its credit rests, you find nothing but affirmation, instead of explanation; and the whole good effects are resolved to neutralizing the bad smell; a task that belongs to the nurse and chambermaid, and not to the physician.

But let us return to a more profitable subject.

The first ship on our present list is the *Saturn*. This ship arrived in Cawsand Bay on the 16th of April 1799, from a six weeks' cruize, during which twenty-seven cases of typhus appeared; of which one man, subject to phthisis, and addicted to intoxication, died. Mr. T. Johnston remarks, " I could not trace this fever to any infection im-
" ported by any of the people; but as the vario-
" lous contagion had been brought on board in
" the clothes of some women, the febrile infection
" might also come in the same manner, there
" being two hundred women in the ship. Intoxi-
" cation was very general when in port before the
" cruize, though little known at sea. But a very
" bad practice was completely indulged in: when
" the watch was not employed during the night,
" they went to sleep on the boards under the half-
" deck. They were so attached to this custom,
" that not even wet decks prevented them from
" lying

“ lying down. On our arrival in Cawfand Bay,
“ the practice of inebriety was again indulged
“ in.

“ On the 29th of April we began to unrigger the
“ fore-mast and bowsprit to get others in: this
“ duty was much hurried, that we might sail with
“ the fleet. But when it was known that the
“ French fleet was out, nothing could exceed the
“ exertions of both men and officers to get the
“ ship ready for sea. The hammocks were not
“ more than four hours below: the sentinels that
“ kept the middle watch had not an opportunity
“ of being more than one hour in bed out of the
“ twenty-four. We had now some blowing weather,
“ with rain and cold. During a gale, there
“ was duty to be done which required the men to
“ be much in the water; the sea ran so high as to
“ wash many of them away till picked up by the
“ boats, when others supplied their place. The decks
“ all this while were dirty and full of lumber; and
“ the orlop in a most ruinous state to health.”

Under these circumstances a typhus could not fail to spread, and to gain fresh activity, which it did. The nitrous fumigation, to which Mr. Johnston was partial, was practised from the first appearance in the Sick Berth and decks; on the morning of the sixth of May nineteen were seized, and on the morning of the seventh forty-five made their complaints known. This day, at noon, I visited the Saturn, having come to reside at Plymouth Dock, by order. At this visit I interdicted the further use of nitrous vapour, that the saltpetre might be reserved for better purpose, and recommended our usual means of purification, which, from their simplicity were easily understood, and as easily performed. No cases appeared after
the

the 12th, but an immense number in all were sent on shore; many of whom got away on false pretences, by invaliding.

The service, however, gained something by this state of the Saturn. I found that the infected beds at the hospitals were only fumigated, but *never* had been scoured. I therefore requested Captain Totty to insist upon their being washed, which was done at the trifling expence of six-pence a pair for blankets. It is much to be wished, that on all similar occasions officers should attend to this necessary process. It is well known that the bed-houses are common sources of infection, from whence ships have often imported diseases; and how can this be otherwise, till every article undergoes frequent exposure out of doors to the air and cleansing with soap and water.—Consult Admiral Pringle on Hospital Bed houses.

Mr. Johnston's treatment is thus judiciously given: "On the first attack the patient was carried to the Sick Berth, and carefully washed with soap and water; put on clean clothes and took an emetic. When its operation was over he took mist. salin. \mathfrak{z} ij every two hours, and an ounce of wine every intermediate hour. At bed-time pulv. antimon. gr. vj. op. gr. i ft. bol. If vomiting returned he took deccot. quass. \mathfrak{z} ij. T. opii gut. 5 ft. haust. 2da. quaq. hora. The bowels were kept rather open. Diluting drink, with wine sometimes to \mathfrak{l} ij in 24 hours. When remissions took place bark was given with the wine, in such doses as the stomach would bear, and continued till the appetite was perfect." Twenty-eight cases were cured on board by this method of treatment.

This narrative strongly exemplifies the rapid progress of contagion when assisted by excessive fatigue, ebriety, exposure to cold, and other debilitating causes. We are surprized at the officer of a night-watch allowing his men to sleep on watch at all; but he is doubly culpable to permit this on wet decks. The loss of a yard or a mast is a trifle compared with the loss of health. I have often wished to see a code of rules respecting health from Admiralty, by which means every ship would be brought to due order of discipline. At this moment the internal economy of many in the fleet differs as much as the features of their officers.

In the month of August, while the *Hector* was docking in Portsmouth, a typhus appeared, that was traced to a place called *Oakham Bay*, where a number of low women live. It is rather uncommon to find typhus prevailing at that season of the year; but this summer was an exception. The rain which fell in the summer and harvest exceeds any computation ever made, and the weather was cold as November. I am sorry that Mr. Crawford's paper on this fever has been mislaid; but it chiefly related to the inefficacy of the *nitrous vapour*, in destroying the contagion. When the *Hector* came out of dock, and the officers returned to their own modes of discipline, the fever quickly disappeared; although in the hulk the vapour was duly persisted in.

On the 26th of September the *Uranie* frigate, Captain Towry, arrived from his station off Brest, with a fever supposed to be infectious, of which two men died at sea.

It

It does not appear that any imported contagion could be suspected here; the frigate was under fine discipline, but leaky in her upper-works, and the weather for some time tempestuous. These causes we frequently observe, produce fever of the typhoid kind, that is evidently spread by contagion, as it appears among attendants of the sick and others not exposed to the severe duty of the ship in hard gales, &c.

Mr. Perkins remarks, "this fever had two kinds of attack, or orders of symptoms; differing only perhaps in the particular constitution of the patient.

"The first is attended by violently increased action, with seemingly great determination of blood to the head, with strong and distressing pulsation of the carotid and temporal arteries; full distended countenance; *tunica conjunctiva* inflamed; eyelids heavy, and tongue large; hard and apparently oppressed pulse, universal pains, hot skin, *tinnitus aurium*.

"In the other, the animal functions are evidently impaired; the features are shrunk, and the whole countenance expressive of a dejection of mind, in some instances amounting to terror; great pain and heaviness over the eyes; pain in the small of the back; anxiety; tongue small and white; nausea; skin dry, but not unusually warm; sometimes giddiness and imperfect vision; pulse small and quick: costiveness precedes both attacks."

It is to be observed, that the attack of this fever might exhibit these orders, without any real difference in the nature of the disease; and it might depend very much on the time of the accession, that the symptoms were noted. The cold stage

would exhibit those signs, last mentioned by Mr. Perkin, and the hot stage, those narrated in the first order. This is a very interesting part of medical practice to the young and inexperienced surgeon; for the early treatment of typhus must often determine the fate of the patient. If the temporary appearance of excitement, during the hot stage of the accession of the fever, should urge him to the use of the lancet, a debility will be found to succeed, *from whose bourn no traveller returns*. These are cautions to be found in no other author; but they are not the less just, and will amply compensate the feeling mind for every extra visit he makes to the sick bed of a fever patient. Indeed their truth is admitted in the following candid remark of Mr. Perkin. “Both the men that died
 “were seized with the first order of symptoms;
 “both were bled, and the primæ viæ cleaned.
 “But whatever difference in other cases there
 “was in the mode of attack, the disposition of the
 “disease so changed in four or five days as to
 “render the same method of treatment necessary
 “throughout the whole.” This implies that the symptoms of *apparent* excitement soon disappeared, and the real genius of typhous was more distinctly marked after the fourth or fifth day. Flushed countenance and inflamed eye, even last much longer in a number of typhous cases, when there are present the most evident signs of weakened and depressed nervous energy: of such great importance it is to enquire into every circumstance that is connected with, or preceded the indisposition of the patient.

Several of the Uranie's people died at the hospital, out of forty sent on shore, and she was considered safe in ten days from her arrival.—In one

of

of my visits to these people, with Captain Towry, the hospital physicians complained to the Admiralty, that I interfered with their practice, when I desired two convalescents, to request from their attendants wine without bitters. The wine it appeared was embittered S. A. to prevent it from being drank by the nurses, who in this hospital exhibit all the medicines, and these patients were throwing it up. The plain truth of the matter was, I was extremely angry when I beheld such a custom, and must have been a cold-hearted wretch had I done otherwise. The Admiralty restricted my visits, but these gentlemen in a short space, thought proper to relinquish the bitter practice.

October 6th, 1799. The Captain, commanded by Sir R. Strahan, Bart. arrived in Cawsand Bay, having typhus on board. This ship a few days before came to Torbay, with a squadron under Sir J. B. Warren, Bart. had experienced much bad weather, and was leaky in her upper works. One man died on board, on the third day of his fever, and eighty were landed at the hospital, some of whom were very slightly affected, but others of them died on shore.

No imported contagion could be traced, but that the fever was contagious, is evident from the first men that complained being all messmates; it then extended to the attendants of the sick, and a boy was affected who occasionally visited his messmate in the sick-berth: this is the usual progress of infection.

Mr. Farquhar says, " About twelve days ago a
" fever began to make its appearance on board
" the Captain, which since that time has rapidly

“ spread to thirty others, one of whom became
 “ delirious, and died on the third day from the
 “ attack. The symptoms are, severe head-ach
 “ and giddiness, sickness, or pain at the stomach,
 “ sensation of cold in the back and loins, great
 “ weakness, and general uneasiness over the body;
 “ the eyes, and countenance dejected. These
 “ complaints are succeeded by frequency of pulse,
 “ and hot skin; the tongue becomes foul and dry,
 “ and the patient is frequently seized with delirium.
 “ The belly is in general regular, though some
 “ have had a troublesome diarrhœa.”

Mr. Farquhar's practice did not differ from what
 we have had so often occasion to mention. The
 Captain was under fine regulations, and she was
 deemed fit for sea in sixteen days, and sailed early
 in November.

On the end of December 1799. A fever of the
 typhoid kind appeared in the *Cæsar*, then at
 anchor in Torbay, previous to which the ship had
 enjoyed uncommon good health. Mr. Nutt's ac-
 count of the symptoms does not differ from the
 usual train in typhus; but it made little progress,
 few at a time being confined, and did not in all ex-
 tend to above fifty cases, from the 28th of Decem-
 ber to the 28th of March.

Mr. Nutt thus describes its production: “ I am
 “ of opinion, that the fever was generated by the
 “ general dampness of the ship; the bedding fre-
 “ quently getting wet, by the hammock clothes
 “ being bad, the upper decks being leaky, and
 “ getting the clothes wet on duty from bad wea-
 “ ther. The serving of grog was hurtful: it is
 “ well known that they buy it of one another, get
 “ drunk,

“ drunk, and sleep on the deck. From the 7th
“ of December till the 2d of January, the ship
“ was at single anchor, during which time we had
“ strong gales from the eastward, with rain, sleet,
“ and snow. The lower gun-deck was continually
“ wet by the water that came in at the hawse-
“ holes, and the tiers were kept damp, by fre-
“ quently veering out and heaving in the cable.—
“ From the 3d of January to the 6th of February,
“ the wind was westerly, with a great deal of
“ rain, and damp weather.—On the 6th of Febru-
“ ary we sailed, and till the 23d of March, when
“ we anchored in Cawsand Bay, the weather was
“ good for the season of the year.”

I observe from Mr. Nutt's Diary, that after the Cæsar went to sea, when the weather was mild, the attacks of fever became less frequent; for in the seven weeks, only twelve cases of fever appeared. This confirms our general observation, that the progress of typhus is greatly influenced by the state of the weather.

Mr. Nutt adds, “ Particular care was paid to
“ keep the patients clean in their persons, &c.
“ and no person was allowed to visit those in
“ fever but the attendants. During our sickness
“ no washing of decks was allowed; they were
“ cleaned by *scraping* and *dry rubbing with sand*,
“ fires in the day were placed between decks, and
“ in the orlops. The sick-berths, cock-pits,
“ tiers, and between decks, were washed with
“ vinegar. Sir James Saumarez sent every day
“ some fresh meat, to be made into soup, which
“ contributed much to restore health.

“ The general method of treatment was, to
“ give an emetic, and a bolus of pulv. antim. and
“ opium at bed-time. The bowels were kept
“ open,

“ open, by gentle laxatives. Opiates with mist.
“ camphoræ at bed-time were continued. I did
“ not repeat the antimonial beyond the second day,
“ as the stomach was very irritable, and I thought
“ it increased the irritability. If the stupor was
“ great, and delirium came on, blisters were ap-
“ plied, and always with relief, except in one case,
“ which was fatal. As soon as any remission took
“ place, I gave decoct. cinchonæ, with mist.
“ camphoræ, and where the stomach would bear
“ it, cinchona in substance, but this was seldom to
“ be done at first. Wine in moderate quantities
“ was allowed from the beginning, and increased
“ to a pint a-day, which I thought was sufficient,
“ as the wine was of a good quality. As soon as
“ convalescence appeared, the man was moved
“ into another berth, under the fore-castle.”

The Captain's clerk was sent on shore at Dartmouth of this fever, where he died from relapse. Some midshipmen, who messed with this gentleman, took the fever, from which it was inferred with justice, to be of a contagious nature. The attention paid to health in this prevailing sickness, reflects much credit on the Captain, officers, and surgeon, as they had to contend with the worst part of the season, and only three cases were sent out of the ship previous to going to sea. We sometimes observe young gentlemen affected with diseases of this kind when prevailing in ships; and in Mr. Nutt's list I find five of that description. Their age is generally of that period most liable to contagious fevers, at which, a singular susceptibility must be inherent in the body, for they can have little or no communication with the sick.

A fever

A fever proceeding from the same causes, as those mentioned above, appeared in the month of January, on board the Edgar. Mr. Fuller, the surgeon, was sick a great part of the time in which this malady prevailed, and six deaths happened before the ship came to Cawsand Bay, on the 6th of February, 1800. (Vide the General Abstract of Health.) On this account no perfect detail came to me on the subject. Such occurrences fall heavy on public service, as well as on the brave men who become victims to these diseases. The fever, in its early stage, seemed combined with both pneumonic and catarrhal symptoms; and, in some, it assumed the form of dysentery. When continued gales of wind, as often happen in this season of the year in the Channel, call for uncommon exertions of duty, such complaints must naturally follow. But a careful investigation of causes will remind the surgeon, that his patients have suffered excessive fatigue, have sustained an immense loss of muscular excitability during their labours; and that under such a condition of body, to take blood from them, is reducing them to the extreme degree of both kinds of debility. Indirect debility has already been induced by excessive muscular action; and by bleeding, is withdrawing that excitement which is bestowed by the vital fluid, which brings the sick man to a state of direct debility, and which, added to the other, leaves him little short of death.—I subjoin an abstract of the Edgar's fever patients from coming to port till she failed.

During the Fever in February and March 1800. Abstract from Sick Book.	Petty Officers.		Able.	Ordinary.	Landmen.	Boys.	Serjeants.	Corporals.	Privates.
Sent to Plymouth Hospital	10	17	30	24	1	2	2	47	
Returned from thence -	5	4	8	5	1	0	1	3	
Total not returned - -	5	13	22	19	0	2	1	44	

H. M. S. Edgar, March 31st. 1800.

On this occasion the nitrous fumigation had a very fair trial. The state of the weather was such, as almost to prevent the employment of other precautions against infection: but the fever spread with rapidity to half the ship's company, and was only checked by a very different method of prevention.

When the nature of a fever is not clearly known at the very first outset, a correct history is scarcely to be expected. A latent infection that had been only called into action by particular causes, is thus overlooked; the early cases, which are always marked by the most aggravated symptoms, meet with injudicious treatment; and if the medical attendant is at all officious in his practice, the most fatal consequences ensue. *Heu! sero sapiebant Phryges.*

March 28th, 1800. This day arrived in Caw-sand Bay, the *Pompée*, Captain Stirling, having on board seventy cases of fever. This sickness became

became general a short time after its appearance, in the beginning of March. Some accounts were given me, that a man brought from the Royal Hospital at Haslar, had the fever upon him when he joined the *Pompée* in Torbay: but a more correct history of that case, from Mr. M'Laughlan of the *Achille*, the ship which carried him from port, convinced me that this was not the origin of the disease. I was absent when the *Pompée* arrived, and did not visit her the first week. To this period eight deaths happened, all of which, as far as I could learn, sunk under the use of the lancet. About an equal number died on shore, whose treatment I knew nothing of; but I can suppose it was not from inordinate use of the grape. The separation quickly overcame the fever on board, except what happened from relapses in those sent from the hospital. Many of these had indulged the pleasing hope of being invalided, from the facility with which they saw it accomplished; and those that were disappointed, seemed to feel it most sensibly. The *Pompée* to this period, had been one of the most healthy ships in the fleet; was clear of fevers when she sailed again, but had a number of convalescents at that time, that afterwards got well. This ship was one of Sir R. Calder's squadron that went to the West Indies in pursuit of the French under Admiral Ganthaume, and returned to Cawsand Bay with only one object for the hospital.

The nitrous fumigations of Dr. Smith were carefully practised during this contagion, till I visited the *Pompée*, when the idle waste of saltpetre was stopped.

The *Pompée's* sick-berth, by order of Lord St. Vincent, in the summer after the fever, was changed into the *Markham* form; which includes the

the head door and midships, with a sky-light over that, like the Centaur, and thus converted into a commodious dispensary.

I must here refer my readers to the general abstract for May 1800, for some general remarks on the production of fever. The disease indeed seemed, during the latter winter months, and in spring, to pervade, more or less, every ship in the fleet. The general concurrence of symptoms was uniform in every ship; it was almost impossible to mistake the nature of the fever. These ships had cruized with Sir A. Gardner the whole winter. The short respite from sea, while in Torbay, afforded little exemption from hard duty, from being constantly preparing to start; and it ought to be mentioned, that at no period during the war, was the blockade of Brest so complete in the winter season, as under that valuable officer.

I have already given the history of typhus as it appeared on board the Captain, in October 1799. Mr. Farquhar, in his report for May 1800, says, that during the winter some typhoid cases were constantly in his list, without showing a disposition to spread much; some cases of dysentery are also mentioned to have discovered themselves. Twenty-five in both complaints are the number for May. Mr. Farquhar remarks, “ Young marines, land-
“ men, and boys not accustomed to the ship, have
“ been most subject to it. The attack generally
“ commenced with giddiness, pain, sickness, and
“ oppression about the stomach; great weakness
“ and

“ and depression of spirits; small frequent pulse;
“ the tongue at first moist and clean, and in many
“ cases continued so through the whole course of the
“ disease. These symptoms were followed by
“ great anxiety and restlessness; in some instances
“ delirium took place on the second day. Sore-
“ ness of the mouth and throat were very common
“ at the commencement of the fever, but gene-
“ rally disappeared on the second or third day. In
“ one or two cases, the whole inside of the mouth,
“ tongue, and throat, was much inflamed, and ap-
“ peared as if the cuticle had been removed:
“ the tonsils and salivary glands did not appear
“ much affected. In some cases, and particularly
“ in a boy, who became delirious on the second
“ day, and died on the 5th, the heat of body,
“ during the whole course of the fever, was con-
“ siderably *under* the standard of a person in
“ health. In the spring of the year diarrhœas and
“ pulmonic complaints were very frequent among
“ the people, and reduced many of them to a state
“ of extreme debility. These complaints fre-
“ quently succeeded each other alternately in the
“ same patient, and very often were combined
“ with the fever prevailing in the ship.

“ On the 9th instant, we had the misfortune to
“ lose two marines. One of them died on the 5th
“ day of the fever, and had not been at sea before
“ the last cruise: the other had been long sickly,
“ was subject to severe head-achs, and constant
“ hard dry nervous coughs. Some days before
“ his death, a suppuration formed on his left
“ temple, which gave exquisite pain; his whole
“ face swelled to an enormous size, he became
“ quite frantic, afterwards comatose and insen-
“ sible, in which state he remained for twenty-four
“ hours before he expired.”

In the report for the succeeding month, Mr. Farquhar gives the following distinct testimony in favour of the *affusion of cold water*, as recommended by the learned and accomplished Dr. Currie of Liverpool. “ In several cases of typhus
 “ which have occurred this month, I have made
 “ trial of the affusion of cold water, and have
 “ found it to answer my most sanguine expectations,
 “ particularly in two cases, where delirium had
 “ come on; and where, from the general debility,
 “ frequency and irregularity of the pulse, great
 “ heat of skin, &c. I had little hopes of their recovery.

“ The patients were put into a large tub, and
 “ had a couple of bucketfuls of salt water poured
 “ over them. The shock which they at first received, appeared to be very severe, but the
 “ advantage which they derived from it was so
 “ great and manifest, even to themselves, that
 “ they willingly submitted to its repetition next
 “ morning. They are both at present convalescent, and, I apprehend, out of all danger.”

In the Cumberland, which ship had been but lately commissioned, Mr. Tosh generously complains for his people, in the following manner:
 “ I attribute the prevalence of typhoid and catarrhal complaints, from the 22d of April to the
 “ 22d of May, to the great indiscretion of drenching and soaking the decks with water; the
 “ effects of which, not being felt sooner were,
 “ from the ship’s company having lived well. A
 “ nine weeks’ cruize, since February off Ushant,
 “ thus rendered them more susceptible of cold,
 “ and predisposed them to febrile indisposition.
 “ All

“ All remonstrance and expostulation on my part,
“ against this injurious practice, had been in-
“ effectual.”

This was, I believe, the only ship in the fleet where such a custom prevailed; it was very fair to conclude, that no health in cold weather could long withstand so cruel and inconsiderate a practice. Two died, seventeen were sent to the hospital, and thirteen recovered on board in typhus.

But while these fevers were increasing in number, and admitted to be generated in the ships, in others contagion was distinctly traced to importation, by parties of raw men from guardships. The Royal William at Spithead, had usually a share in communicating diseases of this kind. The Mars, the flag ship of R. A. Berkeley, was infected by men from the Royal William. The officers of that receiving ship denied the charge, till a fever had made such progress as to make them send numbers to the hospital!

Mr. M'Laughlin of the Achille, also traces his disease to the Royal William, and much about the same period as the Mars. “ I beg leave to acquaint you, that a typhus fever began to make its appearance among our people about the beginning of May, which I am of opinion was brought by supernumeraries from the Royal William. I am happy to be able to inform you, that we are at present (May 29th) free from all sickness. This speedy extinction is, no doubt, owing to the early and prompt separation from the ship of those taken ill, and the attention paid to cleanliness and ventilation.” Such a speedy extinction of infection could not fail to happen in a ship under the command of Captain George Murray. In this fever were seventy cases,

twenty of whom were very severe, the others but slightly affected.

On board the Canada, the typhus appeared at sea. Some malignant cases were among the first affected, and the ship came to port on the 14th of May to land them. I examined these men, who had a very unpromising aspect; eight were therefore sent on shore to Plymouth hospital. Mr. Lind thus describes its beginning and progress: "On the 25th of April this fever first broke out in the Canada, which, from the similarity of symptoms in the different patients, and the mode of attack, I had a right to consider of an infectious nature. I am further convinced of this opinion from the first man taken ill, being one of a draught received from the Cambridge, about the time the Canada sailed; this man's name is John Cressingham, and is at present a convalescent on board. The usual symptoms on the commencement of the disease are, a day or two perhaps before they complain, a sense of languor, lassitude, and lowness of spirits, succeeded by cold chills, followed by a sense of burning heat over the whole body; great prostration of strength, without any sweating stage. Pulse always weak and frequent; pains of the back, breast, and loins. At times some difficulty of respiration, anxiety, and oppression about the *præcordia*, nausea, and vomiting in some; livid spots appeared about the breast in two cases, on the fourth day. One man died on the seventh day of the fever, became delirious on the fifth, and was covered with petechiæ.

" My

“ My general treatment at first, was to have
“ them well washed and shifted. I used emetics,
“ antimonials, blisters, opiates, saline draughts,
“ &c.; latterly I had recourse to bark and red
“ wine. Early separation was attended to as much
“ as circumstances would permit.”

It was expected after the eight bad cases were moved, that little danger could be apprehended from any fresh attacks, as the mild weather was now set in. After going to sea, others appeared, still preserving the typhoid type, but with more pulmonic affection, and stricture across the breast. Three cases died at sea; and it was some weeks before the disease entirely vanished. Mr. Andrew Baird, surgeon of the *Ville de Paris*, Mr. Lind reports, frequently visited the *Canada's* sick-berth. Mr. Baird in one of his visits was reasoning with Mr. Lind, from these pectoral and catarrhal symptoms, whether the fever could not be more safely treated by venæsection. One of the patients who was most affected in that way, was therefore raised in his hammock, for the purpose of being bled; but, as might have been expected, the sick man was seized with *syncope*, and the new method of cure was abandoned.

Opinions similar to that of Mr. Baird's, have been frequently met with in our attendance of the fleet. I have been conducted to a sick-berth, with the expectation of visiting cases of peripneumony, but much disappointed at finding the whole labouring under a severe typhus.

Pneumonic and catarrhal complaints are common in the Channel at all seasons, but particularly towards spring and the beginning of summer. At these times they readily ingraft themselves on typhus fever; together, they assume the marks of inflammation, particularly at the accession, and

especially during a hot fit. The flush on the cheek, redness of the eyes, and throbbing of the temporal arteries, give also the suspicion of determination to the head, indicating phrenitis. But there are still other symptoms to be taken into account, which shew the character of typhus. These are, the extreme debility, the loss of muscular power, depression of spirits, nervous affections, condition of the tongue and stomach; and, at the same time, that dejected appearance of the countenance, which can never escape the attentive and experienced observer.

Hear how bleeding has sometimes been repeated in cases of this kind: as the blood flows, the senses decline, and the stricture at the breast is not felt for a time. But as the senses return, so also the pain of the breast is again complained of. The pain disappeared from venæsection before, and it is once more resorted to. The patient again feels relief as the blood flows, from his senses being impaired, but often expires while muttering expressions of ease from his mouth.

This is a period of the disease that calls for nice discrimination on the part of the surgeon: in the advanced stage the typhoid character becomes more distinctly marked.

In the *Magnificent*, some time about the end of April, typhous fever was observed, of which three died in the course of the cruise. Having mislaid *Wr. Veitch's* first account of it, I must content myself with the following narrative, in his monthly return for June 1800. *Mr. Veitch* says, "I am
" sorry to observe, that three men have died of
" fever during the last cruise. The fever noticed
" in

“ in my last report, from peculiar predisposition
“ existing among some men, proved more diffusive
“ than I at first imagined it would ; but still I can-
“ not trace it satisfactorily to a contagious cause.
“ The symptoms evidently demonstrated great
“ diminution of *excitement* ; such as, weak and
“ quick pulse, attended with pain of the head and
“ between the shoulders ; the secretions of the
“ mouth in a morbid state ; mild delirium in some,
“ while stupor, *subsultus tendinum*, and petechiæ
“ marked others. The free admission of atmos-
“ pheric air, with perfect cleanliness, antimonials,
“ cinchona, wine, opium, blisters, the warm bath,
“ as an agreeable stimulus, and glysters were em-
“ ployed on this occasion, and varied in their
“ mode of application, according to the pressure
“ of circumstances, and period of the disease.
“ Might we expect advantages from electricity,
“ as a diffusible stimulus, in any of the stages of
“ this disease ?—The sick-berth, from its proxi-
“ mity to the head, which affords a great quan-
“ tity of sulphurated hydrogen gas, is at times
“ very offensive and disagreeable ; to obviate which,
“ I proposed to Captain Bowater, to nail boards
“ on the seats on that side where the sick-berth is
“ placed *.

“ The further progress of this disease is now
“ arrested, and this we owe to the cessation of
“ cold from the weather, a milder season, no
“ dampness, fatigue or harassing duty ; and, dur-
“ ing the continuance of the fever, to the strict
“ enforcement of cleanliness and ventilation,
“ without having recourse to the diffusion of the
“ *nitrous gas*.”

* The Markham sick-berth prevents all nuisances of this kind.

Mr. Veitch adds, “ I have found the *carbonated* poultice of great use, in producing a favourable discharge from vitiated ulcers: the *charcoal*, I reduce to powder, and then mix it with the poultice.”

With respect to the query of this ingenious surgeon, concerning the use of electricity in typhus, I must answer, that great caution would be required in employing it. The condition of the patient, his quantity of, or degree of, excitability, must be considered, and nice discernment will be necessary in adjusting the proportion of electric fluid to this state of body. I should think that the time of accession, about the beginning of the rigours, would be the most proper for its trial. The first chills which usher in the cold stage, if such can be marked, is the fittest period for the employment of stimuli, to suppress the disposition to febrile movements; as they proceed in succession, and seem the consequence of one another. We use wine, opium, and antimonials, with this intention, because experience has instructed us to measure their quantity with greater exactness than we can some other stimuli. Even heat in low fevers is often misapplied. Different fevers require different degrees of heat: in typhus it is wanted to support the excitement; but you reduce it in fevers with increased action, in order to diminish excitement. Antimony, in the state of an oxyd, has been long called a *febrifuge*, a term now banished from medical language. But the present practice only prescribes it as a stimulant, it is preferred, as in a considerable dose, it excites vomiting; or by exciting the stomach, by small doses, from sympathy, it acts also by relieving the skin, sustaining excitement, and raising the powers of

of Nature, if I may so speak; I mean nervous energy.

Yet, after all our knowledge which has been accumulated on this subject, I believe no medicine is more frequently exhibited with impropriety than antimony. The nausea in the beginning of fever has been too much thought to depend either upon the quality or quantity of the contents of the stomach, while this ought to be referred to the state of that organ itself. The excitability inherent in its coats, glands, muscular fibres, and vessels, if depressed from sympathy with the whole nervous system, must give that disagreeable sensation which we call nausea, whether it is empty or full, its contents acrid or otherwise. In this manner, tartarized antimony, antimonial powder, or James's powder have been repeated, till, by excessive stimulus, such a degree of debility of stomach and intestines is produced that nothing afterwards can overcome. We thus hear of these *viscera* becoming so irritable that no food or medicine will remain, and the patient sinks as much from want of nourishment as from the disease, the palpable effect of an injudicious method of conducting the cure.

In the Royal George, about the beginning of May, a prevailing fever extended so rapidly that Lord St. Vincent thought proper to order that ship to remain in Torbay, for the purpose of accommodating the sick and subduing the disease. On the 31st of May, I was favoured with the following account from Dr. Packwood, who was shortly after superseded by Dr. Felix; both of them men of liberal education, and of acknowledged

ledged abilities, whose long services had afforded them much experience on the subject of Fever and Infection. Dr. Packwood says, " Having
" long since expected to be superseded in this
" ship, I had sent my journal and papers to Portsmouth with the rest of my moveables; I am
" thereby deprived of the opportunity of sending
" you any report for this month; a circumstance
" I the more regret, as a disease with which we
" have been afflicted during that period, and
" which has furnished myself much employment,
" and afforded to others * much matter for speculation, would have been otherwise more particularly described to you.

" It began in a serjeant of marines while we
" were at sea; from him was communicated to a
" private who slept near him; it then attacked
" others of the marine corps, and at length the
" seamen became equally subjected to it †.

" Its progress at first was slow, both in the
" number taken ill, and in the severity of the
" symptoms; neither through its whole course,
" (if we except two men sent to the sick quarters
" at Dartmouth,) has it in any instance proved
" fatal. Several who had apparently recovered have
" relapsed; and the whole number seized is about
" one hundred and ten. Of these fifteen have been
" sent to Haslar or Dartmouth; thirty-two are
" at this time ill on board, and the rest (sixty-
" three) have returned to duty: but not one of
" these, even now, is totally free from certain
" signs of debility.

* Mr. Andrew Baird, surgeon of the Ville de Paris, who thought the disease was of a different kind.

† These early cases were kept on board contrary to the expressed opinion and wishes of Captain Domett, and the surgeon.

" Ten

“ Ten days ago, we had more than ten seized
“ every twenty-four hours ; that number has gra-
“ dually lessened to four ; and now we have not
“ above one additional case in such a period of
“ time.

“ As I had no doubt of its *typhous* nature from
“ the very beginning of its appearance in our first
“ patient, every precaution was early adopted to
“ prevent the extension of such an evil ; and from
“ the present state of things you may judge of our
“ success.—What a triumph this, for the advo-
“ cates of a *supposed destroyer* of Contagion, and
“ for D. C. S. ! Unfortunately, however, for
“ them, such fumigation has never been intro-
“ duced ; and I think we have no cause to regret
“ its absence. I had been told indeed that I must
“ not think of getting rid of our disease without
“ its employment ; and I must perhaps acknow-
“ ledge, that I have herein been departing from
“ my *printed instructions* ; but well convinced how
“ impossible it is for a physician to prescribe for
“ his patients at a distance without error ; and I
“ trust you will not accuse me of having abused
“ that portion of discretionary power, which must
“ be indispensable to all in the situation of myself
“ and my brethren.”

Dr. Packwood's concluding paragraph I should conceive to be the sentiments of all professional men ; and I firmly believe, that had those physicians who have given this sume their official authority, seen a little more of naval service than they have done, under the improved discipline of officers of the present day, they would not on such grounds have consented to its introduction, while other improvements of the first importance are suffered to fail. I beg my reader's pardon for this digression ;

digression; I scarcely expected to stumble again on this magnificent quackery.

Dr. Felix joined the Royal George, on the ninth of June, and found thirty cases of typhus; chiefly slight, in the Sick List; and there occurred from that time to its extinction eighty-four, all of whom recovered. The number affected therefore amounts to one hundred and ninety-four in all; not great when it is considered that only fifteen were sent out of the ship for cure; and the compliment of the Royal George being near nine hundred men.

Dr. Felix, in his report for June, thus expresses himself: " I inclose a state of health in the Royal George from the time I joined her; by which you will see, the disease that has prevailed for some time past, if not extinguished; is at least got under. Indeed, if any thing without separation can effectually eradicate any species of contagion, the unremitted care and attention of Captain Domett must accomplish it *. And, I trust, in what concerns our department we have not been wanting; at least I should not be afraid of sporting my Sick Berth against an Hospital Ward. The season of the year, and

* I do not quite agree with this excellent surgeon on his Sick Berth. Its internal economy was admirable; but the situation was bad. It was placed in the bay of the middle gun-deck. On this deck all the marines sleep; and no perfect separation can be preserved under such circumstances, in the event of contagion breaking out. But how can ventilation be pure in such a neighbourhood; the fore-ports must be shut at night, lest the spray wet the deck; and if the door should be opened, the air rushes in from the sleeping place. Besides, the Sick Berth has no communication with the air, by a skylight or wind sail, as in the improved form under the fore-castle.

" the

“ the weather in general, though we have had
 “ some days of heavy fog, have been much in our
 “ favour. The nature of the disease you are
 “ necessarily in possession of from Dr. Packwood,
 “ and I shall therefore not trouble you at present
 “ with any observation thereon, further than to
 “ inform you that I have had the honour of one
 “ visit from Mr. Andrew Baird, surgeon of the
 “ Ville de Paris.

“ You will conclude from the return of the
 “ Royal George, that recurring to the number
 “ sick, she is, for her class, in a state of health * ;
 “ and would certainly be considered so, if there
 “ was not a prevailing disease still evidently exist-
 “ ing. And the only question is, whether it is
 “ dying a natural death, or whether, from the sea-
 “ son and exertions used, it is only smothered,
 “ and will appear with the winter.—Circum-
 “ stanced as we are, we can only persevere in our
 “ duty, and trust the rest to Heaven !”

Since the period mentioned, the Royal George has enjoyed the most perfect good health, and sent as few men on shore for the year, as any ship in the fleet.

As a sequel to the above narrative of the Royal George, I must here give an extract from a letter of Mr. Bell, surgeon of the Megæra fire-ship, which was employed to carry some of these men to Spithead. Mr. Bell says, “ The fever which
 “ happened on board on the twenty-third of May
 “ last, originated from patients sent herefrom
 “ the Royal George and Achille, to be taken to
 “ Haslar hospital.

* The Doctor mentions six in his Report unfit for quarters after this severe sickness.

“ In the beginning emetics, and gentle antimonials were given; afterwards saline draughts and camphorated julep: a remission generally took place on the third or fourth day, when I gave bark and red wine in large doses.

“ As soon as the patients were able to sit up, their beds were taken into the open air, spread abroad and shook, and their clothes washed. Hanging stoves were continually kept between decks *fore and aft*: every care and attention were taken to cleanse and purify the ship, till the contagion was destroyed, and she has been very healthy ever since. July 28th, 1800.”

The Royal George bore the flag of Admiral Lord Bridport, and he had just left her as this contagious fever appeared. Had his Lordship remained in command but a few days longer, he would have seen proved among his suffering crew, whether an hospital ship could have given relief or not to a sickly fleet; if not for the purpose of separation, at least for dietetic comforts with which the Medusa was stored.

In the Atlas some cases of considerable malignancy appeared, and threatened a very general infection, which early attracted Mr. Johnston's attention. In his report for June he remarks, “ The cases of fever taken ill this month have been much more malignant than those of the preceding month. For some days past there have been no fresh attacks; as the season is now favourable, and great attention being paid to cleanliness and ventilation, I am in hopes we shall have no more trouble. Several of the

“ men drafted out of different ships, to complete
“ the Atlas on her coming out of harbour in
“ May, have been very ill. But for the origin
“ of the fever we must look back to our old small
“ hulk the Rippon, where I found patients afflicted
“ with fever, when I first joined the Atlas.” This
fever-list was twenty-five, and all cured within the
month.

This remark of Mr. Johnston's on the hulk, I know to be a very just one. When a ship goes into dock, or when in want of other repairs, the crew is lodged in an old hulk for the time, which is appropriated to that purpose. These vessels in the winter season particularly, are the greatest drawbacks on the health of a ship's company that I am acquainted with. They are not weather proof, therefore cold, leaky, filthy, and badly ventilated. But these imperfections become serious grievances, when the people of a first or second rate, come to be confined in the hulk of a sixty gun ship, like the Rippon. At this time also, some hundreds of women and children flock to the ships in harbour, and the crowded appearance of the decks, with the surrounding wretchedness of the whole apartments, exhibit a combination of every thing that is calculated to generate disease. The opportunities and means which the men now employ to procure the poisonous spirituous liquors, which are vended in the naval sea-ports, give the finishing stroke to this ghastly scene.

It may appear singular, that abuses of this kind should be allowed to tarnish the naval discipline of the present day. The plain truth of the matter is, that the respective Captains, when ships are in dock, either live altogether on shore, or are absent on leave for private business. They see nothing of what I am describing; and it does not appear,

pear, that any of the port officers ever gave themselves the trouble on the subject *. This has not been my case; so far back as 1795, I made representations to the Board of Admiralty, requesting their attention to this long, but afflicting destruction of health, from the people being badly accommodated in hulks. On this occasion, Mr. Secretary Nepean forgot his usual punctuality, for I was never informed that my letter had been communicated to their Lordships, or whether they had given orders to the Navy Board to correct the grievance. As fresh instances of disease occurred from these causes, I have since repeated the remonstrance, but with the same want of redress. One of these letters is presented in this volume, as a justification of our measures in the eyes of those who may, at some future period, be the ministers of Health in the Channel station. See the Occurrences for December, January, February, and March last, *and the Chapter on Ventilation* at the end.

On the subject of receiving men from the outports, whether seamen or landsmen, I have formerly offered my animadversions. Representations, remonstrances, expostulations, have repeatedly followed one another, but followed in vain; the same routine of cruelty, ignorance, and sloth is permitted; and a future war may be begun before a single step is taken to correct measures, that above all others are the most prolific source of disease; but particularly to ships newly fitted, when men of every different description are all at once mixed together, strangers to their officers, and strangers to one another. Newly raised men, whether volunteers or

* Captain Lane of the Cambridge, first looked into these vessels in 1801.

Impressed, at the respective ports where they are enrolled, by what is called a regulating officer, a Captain or Lieutenant, are confined in tenders or other vessels, till a sufficient number is procured to fill the complement, when they are sent by sea to a King's port. The tenders are fitted with *press-rooms* for security, which are literally prisons, where air, so necessary to animal life, is almost excluded. His Majesty's ships having marine centinels, can have no necessity for these closely built apartments: but from reasons not easily to be reconciled to regular service, a place of that description is said to have been found on board the *Actæon* guardship in the river Mersey at Liverpool. The remote situation of that commercial port, in time of war, has given it many advantages over others, in procuring seamen to navigate the merchant vessels; these advantages have also been increased by the inattention of our regulating officers. A protection and security are here given to seamen on their return from foreign voyages, that cannot be done in any other sea-port. It is within my own knowledge, that many hundreds of men occupied a village in the neighbourhood, which, from the vigilance to prevent a surprize, looked more like a military station, than a resort of thoughtless and dissipated sailors. In the beginning of 1783, when I was surgeon of a small vessel, one of the coasting convoys, a detachment of officers and marines, were sent in the night to impress as many of these seamen as could be taken; but their spies gave the alarm, and very few were brought to the ship. Lord Cranstoun was there sitting out the *Grampus*, and from his great activity and zeal for his Majesty's service, completed a fifty gun ship, while a sloop of war, commanded by a native of the town, lay unmanned. I remem-

bar that respected nobleman gave great umbrage to some of the rich merchants, who were shewing in one hand their advertisements for bounty to encourage men to enter the navy, while with the other, they held the key that concealed them in their drawing-rooms.

Advantages of the kind just mentioned have therefore given to the trade of Liverpool, an ascendancy over other places, because their ships are manned with such facility. I have remarked in my residence at Plymouth Dock, that a very small proportion of men brought from the Mersey are able seamen, and new vigour must be infused into the regulating and impress service at that port, before we can expect to see the due number of seamen brought from it. I shall by and bye have some woeful instances to detail in confirmation of what I have just now advanced.

In the spring of 1800, two sloops of war, the *Seagull* and *Renard*, were sent to Liverpool for men. The state of the *Seagull* is thus mentioned by Mr. Robert Hood, a very respectable young surgeon, whose discernment and precautions on the occasion do him great credit. “ Having received from on board his Majesty’s ship *Actæon* at Liverpool, one hundred and nine supernumeraries, to be brought round to the Cambridge receiving ship at Plymouth by the *Seagull*, I observed four of that number very ill; and soon, upon examination, found them labouring under typhus fever. They were immediately separated from the rest of the crew, and had their hammocks hung up under the booms; and screened off in a proper way, to prevent, as much as possible, the people having intercourse with them in any respect. Being five days in making our passage, and the weather keeping favourable,

“ able, I had the pleasure to see these men
“ getting better. I gave them bark freely with
“ wine, of which they were allowed a pint a-day
“ per man: immediately on our arrival here, on
“ the 28th ultimo, they were sent to the hospital.

“ At this time our own people were all very
“ healthy, as I had not had a case of fever on
“ board for many months before. One man was
“ affected with a pulmonic complaint at this time;
“ but his cough having left him, I was induced to
“ give him some corroborants, as he was much
“ debilitated, and had lost his appetite. But in
“ eight days time I had the happiness of seeing him
“ perfectly well.

“ Immediately on our arrival here, being sus-
“ picious of *typhus contagion*, I pointed out to
“ Captain Lavie, who readily acquiesced with me,
“ to put in force all the necessary means to pre-
“ vent infection. For that purpose he imme-
“ diately caused the between decks, and all the
“ people's clothes to be well washed, and had
“ them particularly well dried and aired; so that
“ from no complaint appearing on board after-
“ wards, for eight days, I was much flattered
“ with the hopes of having escaped the baneful
“ contagion. But, to my great mortification, on
“ Monday morning last, I found four of my people
“ confined to their beds, severely affected with
“ febrile symptoms. Each of them complained
“ of headach, disagreeable taste of the mouth,
“ nausea, and vomiting, with spasms of the in-
“ testines, and frequent cold shiverings, and all
“ the other usual signs of typhous contagion. On
“ Monday evening each of them had an emetic, and
“ at bed-time an anodyne diaphoretic draught. On
“ Tuesday morning I found two more were affect-
“ ed, that had been seized in the preceding night:

“ and on the Wednesday morning five more were
“ affected, all of whom were sent to the hospital.
“ On Thursday morning I found five more that
“ had been taken ill in the night in the same man-
“ ner, and were sent to the hospital. I find two
“ more complaining this evening which I have
“ also brought on shore.

“ I have in all the cases observed very early a
“ general languor and debility, with a sudden de-
“ pression of spirits; and they all complain of
“ severe headach, with intolerable thirst; their
“ tongues appearing much parched, and fauces un-
“ commonly foul, and of a yellow colour. The
“ pulse in general very quick and small; skin with
“ scarcely any moisture upon it, and frequent
“ crimson-coloured flushings in their faces; on
“ examining which, they say, that they have simi-
“ lar flushings, at times, in different parts of their
“ bodies, as well as their heads, which are, as
“ they generally describe it, burning hot. I have
“ not in any one case observed petechiæ, or any
“ other symptom of early putridity.”

The account sent to me by Mr. P. M. surgeon of the *Renard*, is conveyed so little in the language and manner of a professional character, that I must forbear copying it, and be content with what I obtained on my visit to inspect the ship. Indeed, I suspect that this gentleman has not been educated in medicine, his letter differs so widely from any correspondence I have had officially with surgeons.

The *Renard* received a draft of men from the *Actæon*, at the same time with the *Seagull*. I apprehended, from the description given of them by Captain Spicer and his officers, that they had been kept a long time in the prison of that ship, which it seems was in her orlop deck, while the
ship's

ship's company lived above. This was done to prevent them from getting away; a singular kind of excuse in one of his Majesty's ships. They were all badly looking men, badly cloathed, and very filthy. It was not said that any sickness had been known among them. Nay, at the time that I was investigating this prevailing sickness, I was mortified by seeing in the newspaper, an account of a splendid public breakfast, having been given on board the *Actæon* to a number of *fashionables* at Liverpool!!!

On board the *Renard*, rather crouded with her own people, the accommodation for one hundred supernumeraries was bad indeed; nay, they had not room to extend themselves. Many of them had no beds. The officers did every thing for their comfort in the passage; but in such a situation it was impossible to preserve their own people. They all sickened after arriving at Plymouth, and one half the ship's company were sent to the hospital, with symptoms resembling those described by Mr. Hood in the *Seagull*.

The usual modes of purification were adopted in the *Renard*, as well as in the *Seagull*, with the addition of fumigation, to which process Captain Spicer had been accustomed on similar occurrences. Yet the people of the *Seagull* had fewer attacks than the *Renard*, and sent a smaller number to the hospital.

Many of the supernumeraries, after being sent on board the *Cambridge*, were taken ill, and sent to the hospital. But notwithstanding it was now summer, the separation of fresh cases did not subdue the disease. The fever appeared in the *Immortalite* frigate soon after. Mr. M'Cormick informs me, in the following month's report: " In the beginning of June, this ship received a

N 3

" draught

“ draught of new raised men, brought from Liverpool by the Seagull; amongst whom a typhus fever, but by no means of a malignant nature, made its appearance in a very few days. Every precaution was taken by the Captain and officers to prevent a diffusion of the contagion, in which they happily succeeded; the new comers being the only sufferers.”

Mr. Adamson of the Doris, at the same time, makes the following remark: “ The case of fever sent to the hospital, was a landsman who came in a draught from the Cambridge, and brought his disorder with him, which was attended with bad symptoms; he was therefore separated from the ship’s company, to prevent infection being propagated.” June 1800.

Had it been the beginning of winter, as it was that of summer, these fevers might have spread in the ships to which they were distributed, so as to endanger the health of the whole. Although the sloops just mentioned, were the most improper ships for carrying supernumeraries, yet the Renard was ordered to Liverpool on the same duty. But Captain Spicer, with due regard to his Majesty’s service, and the safety of his people, requested Dr. Currie to inspect the supernumeraries, who objected to fifteen men, at that time labouring under a mild degree of typhus. Dr. Currie remarked, with great propriety, that a vessel like the Renard, was badly calculated for that duty, and highly endangering the health of both officers and men. When the Renard came to Plymouth, four cases of fever were landed from her; and, strange to be told, she was sent a third time to Liverpool on the same service.

These instances of fever, are strong facts in favour of the identity of contagion, whatever it may

may be. I employ the term contagion, as best suited to convey my meaning. Thus, we say nervous fluid, magnetic fluid, attraction of gravity, without attempting to explain the quality of these powers, as agents in the system of the universe. We here see two sloops in perfect order, receive each a body of men from a guardship, sail at different times, and arrive one after the other, both affected by the same disease, and from similar causes, without one having any knowledge what was the condition of the other; and all this in a season very favourable to health. If further demonstration was wanted, it is furnished from Mr. M'Cormick's report of the *Immortalité*, to which ship the disease was also communicated, and by Mr. Adamson of the *Doris*.

About the beginning of July, there were scarcely any remains of these fevers in the fleet, an effect which we have uniformly observed from the summer heat. I attribute this to the grateful stimulus of a warm atmosphere, that rouses to action the powers of life, and seems, of all exciting means that act on the human body, the most salutary preventive and restorer of typhoid debility.

As the winter months advanced, no change was made in the disposal of the fleet, excepting the *Ville de Paris*, which ship remained in Torbay, with Earl St. Vincent's flag, the whole were kept active at sea.

The first fever which was met with in this season was on board the *Naiad*, Captain Ricketts Jarvis. Mr. M'Arthur, in his report for December 1800, gives me the following account: "You will observe by the above abstract, that the

N 4

" small-

“ small-pox and typhus fever, have appeared on
“ board this ship, during the last month, and it
“ gives me much concern to remark, that two
“ men out of each complaint have died. I am
“ extremely sorry that I was not able to procure
“ any *vaccine matter* before we sailed from Ply-
“ mouth. It is however some consolation to find,
“ that there are not more than six or seven
“ men on board who have not had the disease:
“ and should it still extend, notwithstanding every
“ precaution taken to prevent communication
“ with the ship’s company, I have some thought
“ of inoculating the rest: the small-pox at pre-
“ sent on the list are of the distinct kind, and in
“ every respect favourable.

“ The fever has assumed the worst form of
“ typhus. It commenced in its usual insidious
“ manner, with slight headach, cold shivering,
“ pain of the back and loins, even accompanied
“ with some cough; on the second, third, or
“ fourth day, a sudden exhaustion of strength
“ took place; the tongue, and round the teeth,
“ were covered with a kind of adhesive saliva,
“ which soon formed a dry black fur, delirium ap-
“ peared, and increased, ending in stupor, with
“ difficult respiration, and involuntary discharge
“ of fœces and urine, in the cases that proved fatal
“ on the 7th and 14th day of the fever.

“ Captain Rickett’s has bestowed the utmost
“ attention to every means that are calculated to
“ destroy the contagion, or any way conduce to
“ the health of the people. Every attention has
“ also been directed to the personal cleanliness of
“ the men; ventilation, dryness, and cleanliness
“ of the ship. Stoves are constantly kept burn-
“ ing below, in the between decks, tiers and
“ cockpits, all of which have been white-washed,
“ and

“ and frequently strewed with lime. But from
“ the state of the weather since we have been at
“ sea, it has been impossible to keep the decks
“ completely dry ; nor have we had for the last
“ month, above a day or two proper for airing or
“ drying the people’s clothes. I have however
“ every reason to expect that, from the strict pre-
“ cautions taken of preventing communication
“ with those in health, the fever will soon be sub-
“ dued, and that the small-pox will not extend
“ farther. The sick have been separated as early
“ as possible, and the clothes and bedding of such
“ as have died, have been destroyed.

“ Both diseases were introduced to this ship by
“ a draft of men from the Cambridge, which we
“ received on the 13th of December. Next
“ morning some of them complained of cold
“ shivering, headach, nausea, pains of the back,
“ loins, and extremities, with some cough resem-
“ bling catarrh. We sailed on the 15th from
“ Plymouth, and on the 17th the variolous erup-
“ tion appeared on one of them, while two others
“ exhibited every symptom of typhus, of which
“ they have since died. It appears that numbers
“ of these men had been pressed at Bristol, and
“ had come round to Plymouth in the Union ten-
“ der, about the latter end of November. They
“ state, that some men were sent from the tender
“ with fever, before they left Bristol ; that on their
“ arrival at Plymouth, some were sent to the hos-
“ pital from the Mermaid slop-ship, and others
“ from the Cambridge ; and that a man and boy
“ with small-pox, were sent from the latter ship,
“ a few days previous to their coming here. It
“ is therefore evident, that the contagions were
“ lurking about them, if not in a state of activity
“ when they joined the Naiad.

“ The

“ The fever has been hitherto entirely confined
“ to the new men: but two of the old ship’s com-
“ pany have been attacked with the small-pox.
“ The fever is at present (January 11th) assum-
“ ing a much milder form than it had at its
“ commencement; and in a number of instances
“ it has been checked in its formation, by the
“ early use of very gentle emetics, opening the
“ bowels, inducing a free perspiration, and giv-
“ ing large doses of bark the moment a remission
“ appears.

“ February 11th. In last month’s report, I ac-
“ quainted you that typhus fever, and the small-pox
“ had been introduced into this ship by a draft
“ of men from the Cambridge. I then enter-
“ tained hopes, from the excellent œconomy esta-
“ blished on board by Captain Ricketts, that the
“ fever would soon disappear; and I am happy to
“ state, that this has been accomplished even at
“ sea. You will observe by the abstract, that
“ two men died of fever during the month; one
“ of these was a young gentleman about eighteen
“ years of age, who had not been at sea before.
“ He had been excessively ill of sea-sickness for
“ four or five weeks; his stomach was in a very
“ irritable state, and was considerably reduced in
“ strength before he was attacked with sea-sick-
“ ness. The other had been a constant sentinel
“ in the sick-berth.

“ The weather last month had been very un-
“ favourable for destroying the typhous contagion.
“ In this month (between the Lat. of 42° and 44° .)
“ the weather was more temperate and dry. Every
“ means before employed in ventilating, drying,
“ and cleaning the ship, with attention to personal
“ cleanliness, and comfort of the people, &c.
“ were persisted in: the fever gradually assumed a
“ milder

“ milder form, and finally disappeared. We have
“ a considerable number of catarrhal complaints
“ on board, sometimes attended with symptoms
“ of pneumonia.—As typhus fever had been so
“ recently in the ship, I sent three of the worst
“ cases of catarrh, of whom I was rather suspi-
“ cious, to the hospital.—During our short stay
“ in Torbay, we were liberally supplied with fresh
“ beef and turnips, by order of Earl St. Vincent,
“ which have been of great use in recruiting the
“ strength of our people. At present the catarrh
“ is very much on the decline; and I trust it will
“ not be increased by the prevailing severe easterly
“ winds.—The last cases of the small-pox have
“ been very favourable; and as there was no
“ communication between them and the ship’s
“ company, until they received new clothes and
“ bedding, I hope it is all rooted out. We have
“ now only three who have not had that disease,
“ and I shall inoculate them the moment I can
“ procure *vaccine matter*.”

In this minute and interesting narrative of Mr. M‘Arthur, we have an excellent example of what can be accomplished by a discerning and intelligent surgeon, when supported in his measures by active and judicious officers. We here observe an instance of imported infection among raw men, whose condition would naturally attract the vigilance of a surgeon fully instructed in the knowledge of his profession, detected at once, and due precaution for the safety of others, by his recommendation immediately adopted by the executive officers of the *Naiad*. And they find their labours rewarded, even while the elements were opposing the means in a disease that threateend great mortality, four having died of typhus; and fortunately it did not extend beyond the new comers.

In

In occurrences of this nature the value of the medical character becomes conspicuous; if the surgeon of the ship has taken care to inform himself thoroughly in the studies of his profession it cannot escape the observation of officers, and even a ship's company. By these means he will receive from his own reflections those consolations which nothing else can bestow; and from his officers and people that gratitude and attachment which repay him for the severe labour of storing his mind with useful knowledge. On the contrary, can there be any thing so humiliating, even to a man of common feeling, as to find, when it is too late, that his cold indifference, his neglect and dislike to the duties of his office, have permitted a dangerous disease to spread among the crew; and at last, when detected by the superior discernment and humanity of others, he is incapable, from his ignorance of the principles and practice of medicine, to direct the method of cure; and if he interferes at all in the treatment of his patients, his blunders either subject them to unnecessary torture, or bring them to a premature death.

In the course of the winter, three ships of the line, the *Glory*, *Edgar*, and *Magnificent*, suffered considerably from low fevers, appearing while the crews lived in the hulks; partly from these damp and filthy lodgings, partly from the excesses committed on shore, or from spirituous liquors brought on board; and probably also from infection acquired in the polluted houses and beds, which had been opened as gin-shops in Plymouth Dock.

The *Glory* sent in three months eighty people to the hospital, yet I was not furnished with a single remark from this ship on so general a sickness. Some cases which I inspected myself, there were every reason to consider as fevers produced
by

by prevailing infection. Our records of the state of the fleet for the war, will serve as testimonies to the medical world, that a large portion of navy surgeons have been industriously employed in selecting facts and histories, which always implies a desire for improvement worthy of the science of medicine.

In my first Volume, I considered the effects of drunkenness, as predisposing the body to receive infection. The subject is one of most serious import in a sea-life, in both a moral and physical view; alike interesting to an officer and surgeon. What avail my speculations on diseases, or an investigation of their remote causes, if they are not prevented and removed. During my residence at Plymouth Dock, I was witness to the opening of two hundred public houses, in addition to those opened before, in the space of a few months. It may be said, 'what is all this to you; you are 'neither regulator of police, or accuser-general?' Certainly I professed neither; and it might belong more to the commanding officer of the port, or to the Governor of the garrison than to me, to impeach a breach of order in the civil magistracy. But I did not come within the class of informers, nor did I step beyond the duties of my office or profession, in the manner in which my sentiments were conveyed to the Board of Admiralty on the the subject. As a proof of this, their Lordships thought well of my representation, transmitted my letters to the Secretary of State for the Home Department, and added their request to the Duke of Portland to prevent the abuses of which I complained.

The subject of my letters was of such a nature, though only intended for the doctrine of health,
that

that it was almost impossible to separate it from some points of police. The dreadful consequences of a licentious spirit being spread among seamen were exemplified a few years ago in the navy. The Secret Committee of both Houses of Parliament, in 1801, unfolded treasonable assemblies, and Mr. Addington said in the House of Commons, that attempts were making to disaffect the men in our ships. If such attempts could be made at all, they could be nowhere so successfully done, as in the new public houses at Plymouth Dock. The whole Channel fleet was paid wages and refitted there. It is next to impossible that two hundred gin-shops added to the former, many of these kept by men whose characters the magistrates had taken no trouble to know, for the licence to each house had been obtained to serve different brewers, whose ale they were to vend, I say it was impossible that such things could be done in a naval sea-port without affecting the public service. It was not long after that a gang of house-breakers were found there, with a publican at their head, some of whom belonged to King's ships; and I have stood at the windows of my own lodging, and seen a cart-load of King's stores seized in the house of another. So far I am justified on the score of police.

There is no human being, in his hours of dissipation and pleasure, that so much needs the protection of a Government, as a British seaman. If therefore he should fall among thieves, and the *Priest* and the *Levite* pass by without noticing him; but if no *good Samaritan* should come that way, the physician of the fleet may be allowed to contribute to his safety, to "*bind up his wounds, and to set him on his beast.*"

But to return to our subject : Mr. M'Laughlin of the *Achille*, in his report of the twenty-fifth of February 1801, having arrived from sea remarks,
“ It is with infinite regret that I acquaint you that
“ our people have experienced a sad reverse of
“ health, since I had the pleasure of seeing you
“ last. Pleuritis and pneumonia, combined with
“ typhus, have been the prevailing complaints;
“ and, I am sorry to add, five have died during
“ the cruize.

“ The inflammatory symptoms run very high
“ in a few ; where repeated large bleedings were
“ found necessary ; but the debility which in general prevailed, exceeded any thing I have ever
“ witnessed. Where copious and free expectoration came on early, the recovery was in proportion soon ; but has been very tedious in many. We had several relapses from the badness of the weather, which indeed has been very
“ unfavourable to our endeavours ; it being a series of violent gales, constantly accompanied
“ with thick fog, rain, or sleet, with the exception of three or four days frost ; during the frost
“ it blew hard from N. E. It is needless for me
“ to describe our distress from such a state of the elements ; with, from fifty to sixty men confined
“ to bed at a time, and not a spot in the ship dry. The *Achille* is extremely leaky in all
“ parts, notwithstanding the ship was caulked when last in port. At that time our people
“ were much exposed to the weather and harassed. On going to sea, the latter end of last
“ month, the ship's company, who were all the summer accustomed to three watches, were
“ suddenly changed to two ; which circumstance, added to the pernicious practice of lying about
“ the wet decks at night, I conceive to have
“ operated

“ operated in no small degree as a predisposing
“ cause of their illness; and in many I am certain
“ the latter was the immediate cause; every pains
“ have however been taken to prevent the sleep-
“ ing on deck.”

On the arrival of the *Achille* in port I visited her; and the remains of the disease in the Sick Berth were evidently typhus. It must be a very rare occurrence indeed in a ship under the circumstances of the *Achille*, to have two diseases on board at once, of such opposite natures, as pneumonia and typhus. The long-continued operation of debilitating powers on the crew, sufficiently appears from Mr. M'Laughlin's narrative, which exactly corresponds with the whole surgeons of the fleet. When in Torbay, in winter, the watering-duty became an additional fatigue; and no respite was given to it, in the severest weather. To these causes may be added, the effect of the lemon-juice, that from an article of medicine, was most injudiciously converted into a part of diet, mixed with water, and called sherbet. Among men liable to these causes, it becomes a matter of nice practice to draw blood; for if signs of inflammation appear, they can at best be very transitory, and the propriety of V. S. is at once questionable, from the succeeding debility being so great. Ninety cases of fever happened at this time.

Mr. M'Laughlin mentions no suspicion of imported contagion; but it appears that a draft of men, passengers in *Achille*, brought the fever to the *Mars*, some of whom had the disease upon them when they came on board. This fever extended to others near them, and infected the attendants of the sick, of which several died, and others, though convalescent, were reduced to the last degree of weakness when the *Mars* came to port.

port. (Vide the Abstract of Health.) Ten of these men were sent to the hospital; one of whom, from his apparent danger, I advised not to go; he wished to be sent on shore, and died in the boat.

The men that infected these ships were, it seems, part of the same tender's complement that tainted the Naiad, and came from the Cambridge to fill vacancies, badly clothed and fitted out for sea at such a season of the year. In the Mars this fever spread to upwards of sixty, and five deaths happened before its final extinction. The means used in both ships were nearly alike; personal cleanliness, and clean clothing, warmth and dryness in the ship, with pure ventilation and white-washing: to these may be added, early separation of the diseased, and all communication strictly forbidden.

When fevers prevail in different ships, that have originally sprung from the same source of infection, as in the Achille and Mars, they preserve their primitive character. The pectoral symptoms which made Mr. M'Laughlin try bleeding, also urged Mr. Blair to use the lancet, against his inclination, in one case; and though the quantity of blood taken scarcely exceeded four ounces, the patient sunk under it. The whole of Mr. Blair's patients showed uncommon affection of the breast; not *determination*, as some would express it, for that is a term that has been usually applied to the inflammation of thoracic viscera; a greater quantity of blood being determined there. The winter and vernal typhus in the Channel is generally attended with either catarrhal or pneumonic symptoms, or both; and are apt to mislead the inexperienced.

In the beginning of April 1801, a typhus appeared in the *Princess Royal*, the flag-ship of Rear Admiral Sir Erasmus Gower; and distinctly traced by the learned surgeon of that ship, to raw boys sent from the *Cambridge*, that had lately come in tenders, &c. from Liverpool and Bristol. Fevers, spread from this source, were in those months extending through a number of ships, and attended by a considerable mortality. In short, nothing but the utmost exertions of officers prevented one half of the fleet from being disabled by sickness. This conduct in port-duty is unpardonable.

Those times of scarcity and dearth of provision in 1800 and 1801, have had their share in generating and extending fevers of the typhoid kind among the poor. We have observed numbers of men brought from the out-ports in tenders, who seem to have entered into the navy to prevent themselves from starving; many of these have been invalided at Plymouth hospital, as unfit objects for his Majesty's service. Remonstrances were also made to the Admiralty on the impropriety of receiving such men by the regulating officers at the out-ports, whose conduct had been highly reprehensible. Depressed in mind by their distresses, worn down by poverty and want of food, and half naked, these unfortunate beings had been crowded into the dark and confined decks of tenders, many of them unprovided with beds, and forced to sleep on wet or damp boards, and had in this manner been sent round to Plymouth. Such is the description of a great number of landmen, who arrived in Hamoaze in the winter and spring of 1801, in different tenders; and who, from the nature of their confinement, could not fail to become

come diseased. In this manner every tender brought with it a *fresh stock* of infection. These miserable and half-fed beings, answered to Shakespear's ludicrous description of a diseased army: "*Half of them dare not shake the snow from off their cassocks, lest they shake themselves to pieces.*"—With such frail materials were our ships recruited at this period of the war.

Into whatever ship these men were distributed, they carried with them the seeds of disease, became first sick themselves, and then spread it to those near them, and most susceptible of its influence. The *Orion*, just commissioned, was fitting at this time, and before she was ready for sea, sent upwards of one hundred men to the hospital, chiefly ill of fevers, and in all the variety of wretchedness.

But the infection in the *Orion* did not stop here; as soon as she put to sea in April, it made considerable progress, and seized a number of the seamen. Five deaths happened at sea. The debilitating effects of this fever, paved the way for a very general disposition to scurvy, which prevailed in July and August, in which months Mr. Allen admitted forty-one severe cases into his list, who were unable to move about the decks. Yet all this happened while the lemon-juice, according to Lord St. Vincent's prescription, was daily issued to the ships' company; in the summer season too, and when large quantities of fresh fish were caught by the people. (Vide the Article Scurvy.) Some slight remains of this typhus, blended with pulmonary complaints, continued till the beginning of September; but Mr. Allen perceiving the immediate debility, very wisely abstained from V. S. and found advantage from a nourishing and stimu-

lant mode, as far as a scanty supply of good things would admit.

The *Majestic*, another ship of the line, had not much sickness while sitting in harbour, the season being then much advanced, but this ship was no sooner at sea, than a typhus appeared, and spread with hasty strides among the crew, of whom thirteen died. But so many in a dangerous state remained in the list, that the commander in chief thought proper to order her to Torbay, where she landed fifty people at Mr. Ball's hospital*. To such a degree did contagion extend from carelessness in the regulating and port duty: it is painful to record enormities, that might have been so easily foreseen and prevented.—

But to return to Mr. Lara of the *Princess Royal*: in the report for April he thus describes the prevailing fever: “The fever which has prevailed for this month was ‘typhus.’ Its first appearance was on the second of April. We had been three days from Torbay; from that period to the sixteenth, fresh cases were daily added to the list; the severe symptoms that characterized the majority of them threatened a greater mortality than has occurred. Of the seven patients who sunk under the disease, one was on the second day from the attack; two on the sixth day; two on the fifth day; one on the 12th day, and one on the 8th day. They were all young men, the oldest not thirty years of age.

* Six of these people died on shore. Mr. Ball, and others, were infected from them, and had the disease in a severe degree. Mr. Stephenson of Haslar hospital was ordered to take Mr. Ball's duty for some time, and saw the hospital at Peington cleared before he left it.

“ To the indefatigable exertions of the officers,
 “ in enforcing, and ready acquiescence to my
 “ suggestions, for forming and maintaining a com-
 “ plete separation, and other points of medical
 “ discipline, may be attributed the early check
 “ to the progress and final termination of this
 “ fever.

“ I have, over one column, used Dr. Darwin’s
 “ term ‘*inirritative debility*,’ to express a state of
 “ disease exhibiting a disposition to typhus; all
 “ the patients so affected were, during the preva-
 “ lence of the fever.

“ The first case of measles appeared on the
 “ seventeenth, and the last on the 21st. I think
 “ both the typhus and the measles were received
 “ from the Cambridge.”

The typhoid patients of both the above descriptions for the month, amounted to seventy-five. The term borrowed from Zoonomia, is very expressive of typhoid debility, when the disposition to fever is only marked by mild symptoms; as always happens in the decline of a prevailing contagion.

In the report for May, Mr. Lara observes,
 “ The fever we have to notice this month assumed
 “ the character of typhus in its progress; but the
 “ symptoms it exhibited were those of catarrh,
 “ cough, running from the eyes and nose, &c.;
 “ which in the majority of cases lasted for two
 “ days; between that and the fourth day there
 “ was a declension of arterial and muscular
 “ strength. In five cases there were, on the third
 “ day in the evening, a determination to the
 “ brain, marked by delirium and flushing of the
 “ countenance. Two of these proved fatal. In
 “ one case, (and only one, either this or last
 “ month,)

“ month,) the *globus hystericus* was very distress-
“ ing; and death ensued six hours after it had
“ subsided.

“ The first case which occurred this month was
“ on the third, a period of nearly three weeks
“ from the former appearance of fever. The
“ marines were first affected this month; and of
“ the fifteen patients there were only five seamen;
“ two of whom died; but one of them seemed to
“ sink more from mental affliction than bodily
“ disease. The last remaining case now on the
“ list offers no indication of danger.

“ The prophylactic means employed against
“ the fever were, separation of the sick; cleanli-
“ ness of the body and clothing; and the air of
“ the sick-berth kept as pure and dry as the means
“ we possessed would admit.

“ Every person taken ill was stripped and
“ washed; had a clean shirt and night-cap; clean
“ sheets also were put to his bed: the clothes
“ taken off were washed and dried,

“ No recovered person returned to his berth
“ without being washed, and his clothes tho-
“ roughly changed; and those taken off were
“ washed and dried previous to their being re-
“ turned to his bag. The blankets also were
“ washed, and in some instances thrown over-
“ board.

“ The beds, &c. were aired as often as the
“ weather would permit: any patient capable of
“ sitting up half an hour during the day, had his
“ bed, &c. on the booms for that time.

“ The practice followed varied according to
“ circumstances arising in the progress of the dis-
“ ease. But on the first attack an emetic was given,
“ and a stool procured; antimonials were after-
“ wards

“ wards given, with or without opium, agreeably
“ to symptoms, and in few cases continued beyond
“ the third day.

“ Wine was freely used where it did not occa-
“ sion flushing of the face. In these cases small
“ doses of opium alone, or variously combined,
“ were sometimes employed; but the most grate-
“ ful, powerful, and effective medicine was vitri-
“ olic æther.

“ In the more fixed pains about the breast and
“ head, without watching, delirium, or stupor,
“ blisters were of very evident advantage; other-
“ wise I did not find them of much, if of any
“ benefit. In the delirium, with flushing of the
“ face, the head was shaved, and cold water ap-
“ plied with unequivocal good effect. Where the
“ delirium was low, and no flushing of the face,
“ the head was fomented with warm water; and a
“ blister applied, in two cases out of three, with
“ some advantage.

“ In one case of low delirium, with watching,
“ opium, wine, and æther, however combined,
“ were rejected, as well as every article of diet,
“ the tincture of opium was rubbed along the
“ spine, in the proportion of a drachm, every
“ four hours; and, on the third application, sleep
“ ensued for nine hours. The pulse rose, he took
“ nourishment, and recovered more than usually
“ rapid. In two other cases the same plan was
“ pursued without effect.

“ The boys received from the Cambridge were,
“ without exception, all badly clothed; and most
“ of them were without beds.”

It appears from a succeeding report, that one
fever patient died in the beginning of June, but
that seven others of that month scarcely deserve to
be classed, they recovered so soon.

In July eight cases appeared, four with severe symptoms; and perhaps the state of weather had some share in reviving the seemingly extinguished fever. Mr. Lara says, "I regret to notice that the hopes I was influenced to express of the typhus infection being annihilated have not been realized. It is however gratifying to remark, that though four cases exhibited the most unfavourable appearances, *all* have terminated happily. I think I am indebted in a considerable degree to the use of *cold ablution* for these pleasing results. I have no doubt but its early use subdued those affections which might otherwise have produced a formidable disease. It was my wish to employ the cold affusion, but the prejudices by which it was opposed were unmountable."

Straggling cases, such as Mr. Lara met with, frequently follow a general infection, without much hazard, if due attention is paid, to revive the disease. Cold ablution (Vol. I.), as tried by Mr. Lara, I have always found beneficial; I only wish it was more generally employed, for it can be done in all stages of typhus, and in both the mild and malignant form.

In this sketch we observe, that an interval of three weeks happened at one time, viz. between the sixteenth of April and the third of May, without any cases of fever appearing. A prevailing infection will sometimes be suspended in a ship in this manner, and acquire considerable activity again from particular causes. Mr. Lara takes no notice of the state of the weather, and probably fogs, rains, or easterly winds, severe labour, &c. might have a share in reviving the half-extinguished contagion, by creating predisposition of body to receive it.

We

We also perceive from this narrative, the assimilation of catarrhal symptoms, with a typhoid type of fever; which are engrafted upon it, but do not alter its character.

The arrangements directed in the Princess Royal to subdue the progress of this fever, without moving the infected out of the ship, must have been conducted with considerable address; as in fourteen days, from a very alarming beginning, and mortal in its nature, it was got under. It must be of infinite benefit to the naval service of this country, to infuse these masterly forms of prevention into the system of discipline in ships; for the defection of men in sending sick to hospitals, is one of the greatest evils we know.

A similar fever prevailed in the Robust in the month of March, shortly after leaving port; of which eight died. The ship at this time was one of the blockading squadron off Rochford, under Sir E. Pellew, and continued at sea the whole of this prevailing sickness. Mr. Chivers gives the following account of its beginning, progress, and termination in sixty-one cases.—Fourteen cases of intermittent fever are also mentioned at this period; and most probably sprung from the typhoid infection. Such intermissions and remissions generally appear towards the decline of the contagion, and give us hopes that it will speedily be extinguished. They here act like monitors, and encourage us, under severe visitations of sickness, to persevere in our means of prevention and purification.

“ I am much concerned to give you so unfavourable a report as the present, of the state of
“ health

“ health on board his Majesty’s ship Robust, for
“ the last four months.

“ You will observe, that our loss, and principal
“ number of sick, have been from typhus fever,
“ which made its appearance here about the
“ fifteenth of March; three weeks subsequent to
“ our sailing from Cawfand Bay to join the Channel
“ fleet. The weather, for a fortnight previous to
“ the commencement of this disease, had been rainy
“ and boisterous; consequently, during the most
“ of that time, the lower deck was badly supplied
“ with air, the ports being almost constantly shut.
“ This, in all probability, increased the virulence
“ of the exciting cause, and brought into action
“ seeds of contagion that had been hanging about
“ the ship some time.

“ I have no doubt as to the mode by which
“ infection has been communicated; namely,
“ through the persons or clothes of men who
“ joined us while refitting. But as they came
“ from different quarters, and are alike subject to
“ suspicion, I will merely state the circumstances,
“ and leave you to judge as to the most probable
“ channel by which it was introduced.—The sub-
“ jects who first attracted my attention, were some
“ men who entered for the ship from Mill Prison.
“ They were badly clothed, and dirty in their
“ persons; which rendered them likely objects for
“ conveying disease; particularly as one of them
“ said he had been ill in the hospital with fever
“ but a short time before. This I should not
“ have hesitated in considering as the cause; but
“ understanding shortly after, that a similar ma-
“ lady existed in other ships of the fleet, said to
“ have been traced to the Cambridge, this ap-
“ peared as likely a channel as the former, having
“ some

“ some of our carpenter’s crew, and other two men
“ while in harbour, in that ship.

“ I must confess, in the first instance, I did not
“ suspect the disease to be of an infectious nature,
“ not immediately recollecting the causes which
“ it appears since to have originated from. And
“ the symptoms indicating more of an inflamma-
“ tory disposition than otherwise, tended further
“ to prevent the idea of typhus. However, in a
“ short time, it assumed a very different form,
“ putting on decidedly the typhoid type, without
“ any particular affection of the pulmonary organs,
“ except that which so often attends this fever, a
“ sense of stricture across the breast.

“ There were evidently in the first cases that
“ applied, every appearance of local inflamma-
“ tion of the chest, as they complained of severe
“ pain in the breast or side, laborious respiration,
“ and distressing cough, attended with expectora-
“ tion of mucus, headach, and thirst: the pulse
“ was generally hard and quick, tongue white:
“ these induced me to bleed at the commence-
“ ment, to raise a diaphoresis by antimonials, and
“ to apply a blister over the seat of the pain. This
“ treatment succeeded with two of the four, and
“ would in all probability with the rest, had they
“ not allowed the disease to increase considerably
“ before they applied. All those who followed,
“ as I before observed, were of the genuine
“ typhous cast, consequently indicated a different
“ treatment.

“ When they first complained, an emetic was
“ administered, which sometimes operated by
“ stool; if not, a laxative was given, as soon as
“ convenient after. Where great heat, accom-
“ panied with thirst existed, I gave aq. ammon.
“ acetat.

“ acetat. or saline mixture succeeded in opening
“ the skin, and producing an alleviation of the
“ febrile symptoms. These were followed by the
“ camphorated mixture, opium, and wine occa-
“ sionally, as the urgency of the case required,
“ paying attention, at the same time, to the state
“ of the bowels. Delirium was very violent in
“ some cases, requiring the utmost attention to
“ prevent them from running about the ship. Se-
“ veral who were attacked by this disease, said
“ they were conscious of receiving the infection
“ from their messmates, or people that slept
“ in the same *longer*, or row of slung hammocks.

“ The means used to *prevent* its further influence
“ on the ship's company were, by separating, as
“ much as possible, the sick from those in health;
“ stripping them on their first application, and wash-
“ ing every article belonging to them, even to their
“ bedding, blankets, and jackets. When a patient
“ died, every thing he had about him was immediate-
“ ly thrown overboard; these, with the strictest at-
“ tention to ventilating and drying the ship, by
“ fires on the lower deck, the wells and cockpit;
“ have, I believe, been the successful means of
“ removing the infection, as no case has occurred
“ for several weeks, I have no doubt of its being
“ perfectly eradicated.—The scorbutic cases (20)
“ all yielded to the lemon-juice, and a chest of
“ oranges taken out of a prize for their use.
“ The convalescents are nearly recovered.” June
23d, 1801.

In this fever of the Robust we observe another instance of pulmonic affection accompanying typhus. We are therefore to be very guarded in withdrawing the vital excitement by blood-letting. If the patient does not perish from the use of the lancet, the recovery is always lingering and slow.

In

In such cases, the best method of proceeding, is to moderate the fever, by keeping the stomach and bowels clear, gentle antimonials, and then blisters in local pains. If the state of the pulse, for the first few days, gives no signs of diminished strength, yet it will be seldom found, that stimulants of any kind can be given with safety. The antimonial preparations are best confined to this stage of fever, when the body seems to bear the alvine evacuation better than any other method of depletion.

The Robust at this time was commanded by Captain Brown, and was brought into fine order of discipline. When I speak of a ship's discipline being favourable to health, I do not only mean, that it includes every thing connected with cleanliness of person and clothing, dry decks, pure ventilation, &c. but also that order and conduct, which inspire activity of mind, and which is communicated to every individual under the command of a discerning and accomplished officer. The orders of such a man are delivered with that dignified demeanor which commands respect, and makes it a pleasure to obey. System and accuracy pervade the whole routine of duty, and every manœuvre is performed with cheerfulness, regularity, and dispatch. An infectious typhus cannot last long in such a ship, it must soon die away for want of indolence and filth to foster and nourish it.

The *Barfleur*, in June and July, buried nine men from a fever, supposed to be typhoid; but not detailed satisfactorily for my perusal or animadversion. I rather suspect that this ship was infected by raw men like the others, and that more was imputed to intoxication, as the cause of it, than ought to have been.

The

The Formidable, Captain Grindal, was also tainted with typhus, by a single boy sent from the Cambridge. It extended to fifty cases, and three of them proved fatal. This ship was truly in high order; was formerly commanded by Captain Whitshed, and afterwards by Captain Thornbrough; both of these officers were famous for modes of order and discipline in their ships. In the present sickness, the attention and humanity of the Captain, officers, and surgeon, kept pace with the affliction of the people, and appeared more like the duties and affection of a private family than a ship of war. By these means, a disease that began with so much malignity, was counteracted in its outset, and soon subdued. The debilitated convalescent was kindly supported by the good things of life, from the table of the cabin and wardroom, and speedily returned to his duty on deck.

Mr. John Allen, like other surgeons, in his report of this fever, laments the want of port wine among the medical stores; and Captain Grindal regretted the loss of the hospital ship, where he had seen on his passage home, when under his wound, so many comforts bestowed on the sick-bed. Mr. Allen's practice resembled our own; he found the cinchona inadmissible, till remissions became distinct, or convalescence appeared. The effect of cold easterly winds, in increasing the number of attacks, was manifest, and a favourable change always succeeded, as the wind shifted to the westward, with dry and warm weather. The subjects of this fever were raw landmen and marines; it did not affect the seamen.

In a former part of my service, when my duty directed me to represent the necessity of good wine, and other comforts to men languishing under
typhus,

typhus, a venerable officer, whom I then served, was so prompt in espousing the cause of suffering humanity, that he gave a written order to the Agent victualler at Portsmouth, to purchase port wine of the best quality from the merchant. This happened in 1790, when a contagious fever appeared in the Gorgon, among a detachment of the New South Wales rangers. It would be well for naval service, if many of our officers would imitate this benevolent conduct of Admiral Roddam. But it is the misfortune here, as elsewhere, we are fettered and perplexed with the stupid and unmeaning forms of office, that must be overcome before we can do any good; and thus the golden opportunity is too often lost by delay and deliberation.

The Magnificent was also infected from this general source of disease, by men newly raised, meagre, depressed in spirit, dirty, and badly clothed. The ship was now at sea; the fever did not extend to a great number of cases; but for the number seized was uncommonly severe. The purser and eight men died. The Magnificent had no remains of this fever when she returned to port in June, and sent no men to the hospital.

A draft of fifteen men carried a typhus from the Cambridge to the Terrible, in March. Captain Fayerman had just joined the ship, and he was warned by the fate of others to take due precaution. The clothes of the whole party were thrown overboard; which, with cleanliness of person, and a well ordered ship, soon destroyed the seeds of disease, and the fever extended but to a very few cases. Mr. Mant, in his treatment of this typhus, found much advantage from the external use of cold water.

To the Royal Sovereign also, this prevailing infection was carried in March, by a single dirty boy.

boy. The man who slept next to him in the sick-berth, was infected in a few days, and it gradually extended to about twenty others: some of these had the fever in rather a severe degree, but in general it was mild. The early and perfect separation of the infected from others, with all necessary precautions besides which Mr. Smithers adopted, contracted the scope of this disease with little trouble, and in a short space it entirely died away.

Mr. Dykar informs me, that the Resolution had nearly shared the fate of other ships, from an Irish boy, of a similar description, who had rather a malignant form of fever. Being early aware of the nature and sources of the fever, Mr. Dykar employed all the necessary means of prevention, and with perfect success.

In May, the Belleisle was thought to be infected with typhus, brought on board by a woman of the town. The man who cohabited with this woman died of the fever: it afterwards spread to others, and was attended with symptoms of great malignity, from which eleven died. Mr. Burd, surgeon of the Ville de Paris, being ordered by Admiral Cornwallis to examine the sick, found much fault with the crowded manner in which they were kept. Captain Domett was at this time in the Baltic, for such a circumstance could not have taken place under his command. Mr. Burd, in a communication on this subject, observes, " I
" found all their patients crowded together in the
" sick-berth, a small place, and I recommended a
" spacious temporary berth to be built under the
" half-deck; all the bedding and clothes of those
" affected to be boiled in soap and water; their
" persons also to be washed, and the strictest atten-
" tion to be paid to prevent intercourse with the
" ship's

“ ship’s company, by having trusty sentinels placed
“ at the door. I also recommended every atten-
“ tion to be paid to free ventilation, &c. There
“ have been no fresh attacks these two days; and
“ I have no doubt, but in a short time, the pro-
“ gress of the disease will be arrested. By a simi-
“ lar mode of conduct, several ships of the fleet
“ have been restored to health; and, in no in-
“ stance have we found it necessary to have
“ recourse to Dr. Smyth’s *infallible nostrum* against
“ contagion.”

The surgeon of this ship seems to have been un-
informed of the practice against infection, so long
established in the Channel, otherwise he would not
have left it to a brother officer to dictate his duty,
as was done in this instance. As Mr. Burd pre-
dicted, the fever disappeared, and the convalescents
recovered fast, from the liberal supplies of fresh
beef, mutton, beer, and vegetables, which were
now sent to sea. On the 12th of September, the
Belleisle arrived in Cawsand Bay, and sent one man
in phthisis to the hospital.

Mr. M^rArthur joined the Belleisle about this
time, and remarks, “ There had been a typhus
“ fever on board, but it had at this time entirely
“ disappeared. I have not received any informa-
“ tion, by which I can trace it to its source. It
“ seems to have passed through the greatest part
“ of the ship’s company; and, when it proved
“ fatal, happened so early as the fourth or fifth
“ day. In these cases, I understand there was
“ an acute pain of the abdomen, from the first
“ attack, which remitted a few hours before
“ death.”

We are not yet to close accounts with the Cam-
bridge: Mr. John Morgan of the Amelia frigate,
Vol. III. P in

in March 1801, thus reports: " Early this month
" a fever made its appearance, with the symptoms
" of a mild typhoid remittent, and gave way to
" the usual treatment, viz. emetics, antimonials,
" bark, opiates, and wine. It was brought on
" board the *Amelia*, by a new set of boys, that
" came from the Cambridge the day before we
" sailed. They were young lads from the coun-
" try, very ill clothed, and dirty. Great care
" was taken to separate them from the rest, and
" also in purifying their bodies with soap and water,
" clean shirts, clothes, bedding, &c."

Thus, in one season, more than one hundred men died of one kind of fever, in the space of a few months. It is probable, that nine-tenths of this mortality might have been prevented by an hospital ship, to which the first cases might have been moved, and thus extirpated the malady in an instant, as often happened before. It is at all times a painful duty to see a man die at sea; but under these circumstances it is particularly so. Something is due to the last moments of an officer or man, who expose life in the service of their country; and a very moderate expence attends all that is required for that purpose. It is a task incumbent on the medical character to make this declaration; for if the exercise of the art is to be deprived of the benevolent feelings, it becomes an insult to the sick-bed.

A few reflections must still be indulged after this gloomy detail of infection, distinctly traced by different surgeons to the same source; and when they must have been ignorant of what was observed in other ships. Had the officers and medical gentlemen been supine in their measures, such a general contagion was capable of unnerving the vigour of the fleet, and bringing the country
into

into danger. I grieve to see a single death happen ; but when it evidently is owing to the neglect and indolence of the regulating and port duty, it is doubly culpable. A ship is fitted in the harbour for the purpose of cleaning, purifying, and clothing new-raised men ; but in all these reports of the surgeons they had been sent to the respective ships in the most filthy condition imaginable.

In my former Volumes I went earnestly into this discussion, with a view to correct the abuses that were destructive to health in recruiting the navy. Yet, after a nine years' war we seem still imperfect, and to have obtained very little amendment. How dreadful to think that a future war must begin without correction in this business. If it is intended in raising men for the navy, that they are to be collected at the out-ports, till they amount to a given number, it is but justice to the men, as well as to his Majesty's service, that they should be lodged in apartments that are conducive to health. Not in filthy and confined small vessels, like the tenders at present in use, but in King's ships, commanded by naval officers, and worked by men belonging to the navy. There, from their first entry, they can be best taught that order, discipline, and regularity of duty, which they are afterwards to follow on a larger scale. Spacious ships, like those now employed for troops, ought also to be appointed for carrying them to the naval ports. But the first business in the recruiting service ought to be, to clean and clothe the raw landman, to learn him how to keep his person decent, and how to preserve his clothes and bedding from being lost or stolen. To these ought to be added, the appointment of a steady old seaman, to instruct him in the first rudiments of manual seaman-

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ship,

ship, that his improvement and usefulness may be progressive.

The tenders on the present establishment are in every respect obnoxious. They are deficient in medical assistance, though no part of service more needs the presence of a well-informed surgeon: and the only naval officer on board is the Lieutenant commanding. The vessels themselves are the property of rich merchants, who make them a traffic; and they are navigated by a master and crew, who usually belong to the ports to which the vessel comes to, and who have other attachments on the spot than public service. On the whole, I consider tenders as a great nuisance, and earnestly wish to see them banished from naval employment.

To the medical reader, who has had no experience of a sea-life, the facility with which these ships were cleared of infection, must appear extraordinary. The crew of a ship of the line, amounting to six or eight hundred men, are lodged in a space not exceeding the fortieth part of a village that usually contains a similar number of inhabitants. Yet, when fevers of this kind break out, in either town or country, they continue to spread a much longer time, and are attended with a greater mortality.—Even in hospitals, the space allotted is at least ten times greater than can be allowed in a ship. How then can any prophylactic measures, derived from inexplicable processes, be brought in competition with those superior duties of discipline? The modern field-marshal of fumigation, even allowing full belief to the quixote adventures of his vapours, and the romantic deliveries they are said to have wrought in
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the scenes of disease by sea and land, by no means claims so large a proportion of credit, as must now be given to these simple and well-known principles. Though ignorant what typhoid contagion is, yet we know enough of its powers to guard against it. We see its debilitating effects exemplified on body and mind: we therefore support the body by salutary stimuli; and we engage the mind with cheerful exercises or amusements. We give to the lungs air, duly oxygenated; and as this is obtained at the cheapest rate from the laboratory of Nature, we take it from the virgin atmosphere. To the stomach we allow food easy of digestion, and if necessary we superadd wine. We obviate cold as a weakening cause, by fires, or warm clothing and cleanliness: we abstain from duty that exposes the body to bad weather, or severe fatigue; and prevent intoxication as favouring the predisposition to be infected. Other subordinate forms of prevention arise out of these. It was impossible that a practice so simple should not work its way among reflecting minds; and the present Volume affords such testimonies in its favour, from officers and surgeons, that I entertain the strongest hopes of its being permanent, and that it will never be tamely yielded up in the navy. Not less than sixty instances of infection in this Volume confirm our prophylactic measures.

In those forms of discipline which secure health, the British Man of War as much surpasses that of other nations as it excels them in all the practical duties of seamanship: hence the value of rendering the subject of health familiar to the naval officer.

During our extensive and long experience of the origin, progress, and extinction of contagion, in ships and every where else, I have entertained a

strong suspicion, that typhous infection *very seldom* affects a person more than once in a life-time. There must indeed be some truth in the observation: after perfect recovery the body seems no longer susceptible of the disease, and breathes a tainted air with impunity, as daily happens in infected ships. When contagion is introduced to a ship a second time, after some interval, it attacks a *new set* of men; the former fever patients are exempted. In situations where there were much danger of being infected, though not much scared at the dread of fever, I have felt confidence from having had the disease when I was eleven years of age; and never had recourse to the charm of prophylactics.

The following history of infection comes from Mr. Carruthers of the Malta, whose zeal and anxiety in the duties of his profession, paved the way for the attack of the disease in his own habit. He says,

“ A typhus fever has lately made its appearance
“ here: I therefore beg leave to detail, for your
“ information, the manner in which I suspect it
“ was introduced, the symptoms, means of extir-
“ pating the infection, and treatment.

“ On or about the first of June last, the Malta,
“ *ci devant* Guillaume Tell, was commissioned in
“ Portsmouth harbour, commanded by Captain
“ Bertie. Nothing particular occurred in the
“ medical duty, except from a large list of vene-
“ real cases. On the twelfth of July the fever
“ first discovered itself extremely violent and
“ sudden, having then just completed our crew
“ of seven hundred and thirty-eight from the
“ Royal

“ Royal William, Montague, and others. We
“ also received between three and four hundred
“ supernumeraries for the fleet cruizing off Brest.
“ This additional number of men did not fail to
“ crowd our decks exceedingly; but what was
“ still worse, the whole were extremely dirty, had
“ no change of linen or wearing apparel, no not
“ a bed or blanket to lay upon, for many successive
“ nights. These circumstances were fully repre-
“ sented as they came under my view. From
“ what information I have been able to obtain,
“ we are of opinion that the contagion was intro-
“ duced by the men who came from the Royal
“ William, as a similar disease had prevailed there
“ for some time. But as many of the sick la-
“ boured under *typhus icteroides*, as well as others,
“ under *typhus petichialis*, I began to think that
“ the Montague brought us the fever from the
“ West Indies; as she had just arrived from Ja-
“ maica in a sickly condition, having buried a
“ number of men on the passage.

“ I was also told, that the Malta, when in the
“ French service, had a similar fever in the Me-
“ diterranean, and had lost a great part of her
“ crew. But as we had been tolerably healthy
“ till within these few days, I have reason to
“ think the ship herself is not to blame.

“ The men, on the attack, were instantly seized
“ with nausea; uncommonly violent headach;
“ syncope; lassitude over the whole body; yawn-
“ ing; tongue and lips and fauces much parched;
“ pulse low, quick, and unequal; great anxiety,
“ with cold clammy sweats. Vomiting was ur-
“ gent in some, but diarrhœa did not accompany
“ it, as I have before seen. Some of the patients
“ had involuntary crying, and shedding of tears,
“ like nervous or hysterical women.

“ On the first attack an emetic of epicac. and antim. tart. was immediately given: the bowels, if necessary, were opened; camphor, opium, wine, blisters, &c. followed; and cinchona during convalescence.

“ No person died on board; for, latterly, on being seized they were immediately sent to Haßlar hospital, where only two died out of three hundred sent on shore.

“ We had recourse to Dr. J. C. Smyth’s fumigation as advised by the Sick and Hurt Board, and ordered in our instructions: but nothing whatever removed the contagion till the supernumeraries were taken out of the ship; when every thing was duly cleaned, dried, and perfectly ventilated.—From this harassing duty I was myself a sufferer in the fever; but I am now well. *Malta, St. Helen’s, August 16, 1802.*”

This ghastly account of the Malta’s fever very much resembles the preceding part of this article. It does very little credit to service. There was certainly a period of this war when no port-officers would have ventured to send men in such conditions, as here represented, into any ship of the Channel fleet. It is even reported, that the First Lord of Admiralty was so disgusted with the representation of the receiving ship at Spithead, that he ordered her to be paid off, to get quit of her contagions. That ship, at an early part of the war, had a spar deck laid over her waist, that she might contain more men, when a deck ought to have been removed, to answer the purposes of ventilation, for the preservation of health.

I was surgeon of the Royal William in the armament of 1790, during the most active period
of

of fitting ships that was ever known at Portsmouth, under the flag of an officer that never permitted service to relax; this was Admiral Roddam. Every man sent to another ship from the Royal William was examined by myself; and not a single instance of contagion occurred in any vessel fitted at that port. It will be well if the examples which are produced in these pages, shall be the means of correcting abuses in the regulating and port duty, that lead to such disastrous consequences. It ought to be remembered, that the Navy of Great Britain will not always exceed that of France in the number of ships as it does at this moment. But if a great number are to be weakened by sickness, as have been in the course of last summer, who can calculate on an effective force. Scurvy debilitates a ship's company; but the effects of a typhoid contagion, even though no deaths should happen, are still more enervating. We must have real and not apparent strength. It was one of the general maxims of the late Earl Howe to complete the quota of men in every ship before every cruise. His language to the Admiralty on these occasions partook of that correct mode of service that pervaded all his naval arrangements. He said, "It is my duty to sail with
" any number of ships you may please to order;
" but it is mine to know that these are complete;
" that my Sovereign and country may never be
" disappointed by a fleet which I have the honour
" to command; or myself and officers hazard our
" reputation in non-effective ships."

Mr. Carruthers mentions reports of the bad health of the Montague's people. But the disease there was not of the kind alluded to. (Vide Occurrences for 1801.) Icterus is not an unfrequent symptom in typhus: it was particularly remarked,

marked among our seamen in the warm summer of 1794, in the fever that was spread by the French prisoners to the ships of the fleet after the victory. A warm season may affect the biliary system, as it is affected by a warm climate. It is always proper to trace the source of infection if possible. Had this fever of the Malta happened near any of the fumigating physicians on the banks of the Thames, attended by such a story from the Montague just arrived from the West Indies, it would have frightened all London; and the Malta, the last trophy of Lord Nelson, might have been condemned to be sunk at the entrance of the river, under the dread of pestilential contagion, as had been done with some merchant vessels.

In the month of August, the Donegal of 74 guns, was commissioned at Plymouth, and fitted out with uncommon expedition. This ship was commanded by an acting Captain, which is frequently considered as a step to promotion. I mention this circumstance, because the fatigue which a ship's company undergo on such duty is unparalleled. Human beings are not stocks and stones: animal life is divided into sleeping and waking, motion and rest; and if all is to be waking and motion, and no just time given to sleep and rest, health must be worn out, and disease is the consequence. Mr. Lind, with great propriety and due discrimination of remote causes, considered the severe labour of fitting, rigging, and stowing the Donegal, as paving the way to a fever that soon made its appearance. Nay, individual instances were met with, where the men were obliged to abandon their labour, by the commencement

mencement of shivering, lassitude, and dejection, that ushered in the febrile paroxysm.

Cases of typhus distinctly marked, first appeared towards the end of August and beginning of September, among some young marine recruits, without, however, extending rapidly to others. Mr. Lind does not date the origin from this source; indeed the description he gives of the raw landmen, put it almost beyond a doubt, where the beginning contagion ought to be traced. These men had lately come from Ireland in different tenders, and put on board the Cambridge. Like all others whom we had lately occasion to mention, they were ill-clothed, and filthy in their persons; and, what added to the misfortune, they had received so many flogs in the tenders, at least charged for so many, that no new clothing could be issued. How uniform all accounts of this kind are in the depredations on health!

The Donegal sailed on the second of October, when the fever cases became more frequent, and came to Torbay in the beginning of November. The severe weather at sea, seemed to assist the activity of the disease; but all communication with the Sick Berth being judiciously forbidden, joined to other precautions, manifestly contracted the progress of the contagion. A few deaths happened on board, from the weather not permitting them to be sent on shore; about twenty were sent to Mr. Ball's hospital, and the rest recovered under Mr. Lind's care.

The usual benevolence of the naval character must close this account of the Donegal. The supply of port-wine, that *soul of recovery* in typhoid debility, of necessity came from the store of Sir Richard Strahan, who was now the Captain. Mr. Lind, with no less generosity than professional propriety,

propriety, also gave them in due allowance, his fine bottled porter, a beverage equally grateful and restorative. These articles, changed at pleasure, raise the sinking spirits, cherish the hope of recovery, and excite appetite, when every other species of support fails, and when the whole *Materia Medica* is exhibited in vain.—Strange, that a nation which imports annually fifty thousand pipes of port wine, and brews porter in millions of gallons, should leave such charities to individuals!

The contents of this chapter afford an immense addition to the history of typhoid infection, as well as to the treatment of the fever itself. To surgeons I must still recommend attention to our division of the symptoms in typhus. A just discrimination of them very materially aids the practice. The employment of antimony, so common in the early stage, seems to be of little or no value in the latter stage, when the disease is rather marked by forms of debility peculiar to itself, than by the alternation of chills, heats, and shiverings, which characterize febrile movements in the first accession. It is also of practical importance to distinguish when the first concurrence of symptoms decline into the second, chiefly known by stupor and the exhausted condition of muscular power. I suspect that a physician of quick apprehension, and a nice observer in analyzing symptoms, will often vary his treatment, under such circumstances of his patient; but the practical precepts to be followed at such a crisis are scarcely to be detailed, and difficult of interpretation. They form the last degree of perfection in the healing art; the happiest combination of genius, talent, and industry in the human mind.

The numerous trials of Dr. Currie's cold affusion, in our ships, strongly support the arguments
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of that physician. In cases where it is forbid, advantages will be obtained from our method of ablution of the body. (Vid. Art. Typhus vol. i.)

The fulsome practice of pouring enormous quantities of bark into the stomachs of typhoid patients, it now appears is fortunately laid aside. We therefore see with much pleasure the treatment of this fever becoming daily more simple, in proportion as the indications of cure are deduced from observations made at the sick-bed, and not from ill-judged opinions on the operations of nature.

An account of a typhus fever, which appeared on board his Majesty's Ship *Ruffel*, in 1800, by Mr. George M'Grath, surgeon.

It is necessary to premise, that previous to March 1800, the *Ruffel's* people had enjoyed the most perfect health, and had sent no person to an hospital for a length of time; which exemption from disease, was certainly in a great measure to be attributed to the fine order of the ship in all departments. A fever of the typhoid type, in March, first attracted the attention of the surgeon and officers, the origin of which is thus accounted for:

“ A short time previous to the appearance of
 “ this malady, we received a draught of men from
 “ the *Cambridge*, some of them much emaciated
 “ and debilitated, and others particularly filthy in
 “ their persons, and extremely ill clothed. Among
 “ the former number, were a few that had come
 “ recently from *Plymouth* hospital, from one of
 “ them (*James Freestone*) I received the following account:

“ He had been sent to the hospital for the cure
 “ of a rheumatic complaint last January, and ulcers which he had on both legs. During the

“ time he was under the care of the surgeon, he
“ was taken ill (to use his own words) with a very
“ bad fever, for which he was removed to a ward
“ appropriated to the reception of fever patients.
“ In this ward he remained a fortnight, during
“ which time he had been extremely ill, until the
“ last three days; when, in a convalescent state,
“ and although much debilitated, was in this con-
“ dition sent back to the guardship, and from
“ thence the following morning to the *Russel*.

“ I hope it will not be considered here as nugatory, if I observe, that previous to his discharge, his body was washed, and his clothes *smoked*, according to the custom of the hospital. This I mention, in order to shew, that I have considered the circumstances of this important subject in a fair and unprejudiced manner.

“ Upon a farther interrogation, he added, that from the time he left the hospital, until he made his illness known to me, he had frequent febrile paroxysms; and the disease which he had there uniformly corresponded with the symptoms which were peculiar to the fever on board, from which I must confess he had a very narrow escape.”

In April or May, when the *Russel* came to Caw-sand Bay, to land her fever patients, who were then but slightly affected, some altercation took place between the physicians of the hospital and Mr. M'Grath, on the supposed origin of this infection; the former gentlemen considering their system of purification impeached in the business.

On my first visit to the *Russel*, I examined Free-stone, who in every thing confirmed what Mr. M'Grath had stated, with the addition, that when he found that he was ordered away from the Cambridge, from being weak and ill, another man had offered to go in his place; which the officer refused,

fused, as he could not alter the name. He also affirmed, that he found, at leaving the hospital, all the dirty clothes in his bag, in the same condition they were in when he first gave them to be laid up, in the store-house.

In the next place, I examined the second man that had the fever. It appeared, that he was one of the same draught from the Cambridge, and had originally been sent from the Roebuck with a fever that he had caught from the Russian soldiers, who were landed on Guernsey or Jersey, on evacuating Holland in the preceding November. Five others from the Roebuck composed part of this draught, and had all relapsed, from being sent on board before they had recovered their flesh and strength. These six men also said, that their dirty clothes, at coming from the hospital were found in their bags in the same condition in which they had brought them there.

These instances of filthy clothing, with others in the Edgar, induced Lord St. Vincent to give public orders, that if dirty clothes were sent from the hospitals with recovered men, it should be reported to him.

Such a connected chain of evidence, joined to the perfect health of the Ruffel, when these men came on board, left no doubt about the introduction of this contagion. The advocates of fumigation ought to shun the face of day, and cover themselves with shame and remorse, and repent in dust and in ashes, when they are told of such havock being produced by a stubborn and obstinate adherence to their practice.

“ The subjects on whom this fever exerted its
“ greatest violence, appeared to be of two different
“ temperaments. 1st. Those who were either
“ constitutionally deficient in excitement, or
“ energy

“ energy of body, or of a lax fibre, and a consider-
“ able degree of nervous irritability, and but little
“ vascular excitement. Among these we may class
“ several men who were then in the sick-berth, and
“ in a reduced debilitated state, from being under
“ the influence of mercurial treatment, (of these
“ we had a vast number) and some of the new
“ men who had been recently from the hospital,
“ previous to being sent on board. These were
“ the people who had most to dread from the for-
“ mal visitation of this typhus.

“ The men of the second order were such as
“ may be said to be neither above or below the
“ standard of health: in these subjects it appeared
“ in a much milder degree; indeed there seemed
“ to be an inherent principle, that supported the
“ body against the more depressing influence of the
“ fever.

“ The first appearance of the disease among
“ men of the first temperament, was in general
“ very sudden, with a sense of cold and horror,
“ which during the first day was alternated with
“ burning heat. The headach, which during the
“ early state of attack was but slight, became in-
“ tensely severe, particularly in the forehead and
“ temples. These were sometimes preceded by
“ vertigo, or, as the patients expressed it, as if
“ they had been knocked down by a sudden blow.
“ The eyes appeared in general wild, and in some
“ diffused and red, with the pupil dilated. The
“ countenance was for the most part cloudy, and
“ looked grim, sometimes flushed, at other times
“ fallow, and of a dingy hue. The patient fre-
“ quently appeared as if much agitated; when
“ spoke to would answer in broken accents, or in
“ a querulous tone of voice, as if produced by
“ fear. The tongue was always at first white,
“ smooth,

“ smooth, and covered with a kind of mucus;
 “ and, when desired to put it out, looked swoln and
 “ tremulous. The thirst was always considerable;
 “ and for the most part there was an uneasy sen-
 “ sation at the stomach; and in some, although not
 “ common, there was vomiting; but this symp-
 “ tom during the first days appeared in few. The
 “ pains of the joints and legs were severe, with a
 “ sense of gnawing, or general soreness, and parti-
 “ cularly in the loins. The prostration of strength,
 “ listlessness to motion, and great muscular debi-
 “ lity, were leading features from the commence-
 “ ment of the attack. The pulse was in general
 “ small, languid, and sunk in the arm.

“ These were the first symptoms, which in ge-
 “ neral lasted till the third day, without any con-
 “ siderable change or remission: sometimes, how-
 “ ever, a sudden remission of all would take place,
 “ and health return uncommonly fast: but this fa-
 “ vourable turn happened but to few who were de-
 “ bilitated previous to being seized.

“ When the disease was protracted beyond the
 “ fifth or seventh day, in general a fresh train of
 “ morbid appearances took place; the pains of
 “ the loins, limbs, and head, became much exas-
 “ perated, the pulse felt small and wiry, so as to
 “ be hardly felt by a slight examination, the skin
 “ uncommonly hot and dry, and the heat not
 “ equally diffused over the body, but concentrated
 “ as it were in some particular part, while another
 “ part would feel cold and clammy. As the dis-
 “ ease thus advanced from the 9th day, the symp-
 “ toms became more fluctuating. The uneasiness
 “ and anxiety increased with great dread of dying;
 “ spasms of the legs, hands, and arms, were com-
 “ mon, with a suppression of the excretions, and
 “ a constant inclination to micturition, without
 Vol. III. Q ability

“ ability to evacuate the urine. This symptom
“ proved so obstinate in one patient, that after
“ using a variety of remedies, we were about to
“ make use of the catheter, when fortunately (I
“ believe from the dread of the operation) he
“ voided upwards of a pint of limpid urine. In
“ another patient, where this symptom had proved
“ very obstinate for a considerable time, and after
“ an evacuation had been procured, a constant
“ *stillicidium* continued for several days afterwards.
“ At this period also the bowels would become
“ torpid, distended, and painful; the pulse more
“ frequent, the heat more ardent, conveying a burn-
“ ing sensation to the hand, the tongue, from white
“ and smooth, would grow black and rough, and
“ the teeth covered with a black crust; lips shin-
“ ing and dry; and the mouth invariably over-
“ flowing with a tough saliva. About this time
“ breathing frequently became oppressed, with
“ great stricture of the thorax, and oppression
“ about the præcordia. As the evening advanced,
“ the patient would become comatose, sometimes
“ declining into a sleep, from which he would be
“ suddenly awoke by frightful dreams; after which
“ he would sink into a low muttering delirium,
“ which for the most part would continue through
“ the whole course of the night. This state of
“ the disease was invariably accompanied with
“ deafness and general torpor, and the patient ap-
“ parently slept with his eyes half open, which
“ gave a frightful appearance to the countenance.
“ The skin from being perhaps extremely hot,
“ would become preternaturally cool, with a pulse
“ scarcely perceptible, from being more expan-
“ sile: at this period the patient would complain
“ of his throat being sore, and difficult deglutition;
“ the stools would pass involuntarily.

“ In

“ In two patients, what nourishment was received by the mouth passed unchanged, in appearance, through the stomach and intestines immediately, conveying a scalding sensation at the anus, as it was evacuated: one of these proved fatal. In two other cases in this aggravated state of the disease, petechial spots appeared on the neck, thighs, and knees; and, in another, an epistaxis, or profuse hæmorrhage took place from the nose. Small livid spots were observed about the angles of the mouth, upper lip, and nose. The skin was now generally dry and impervious, sometimes covered with cold sweat, that felt unctuous: a few were troubled with teasing cough, and bloody expectoration.

“ The first changes for the better would appear about the fourteenth or seventeenth day. These were marked by a more expanded pulse, and an equable perspiration over the whole body, with an abatement of thirst. The stricture of the chest, and difficulty of respiration, would gradually subside, and the black incrustations fall from the tongue and mouth, sometimes followed by diarrhœa, though of short duration.

“ These symptoms were noted at the bed-side of the patient four or five times a-day.

“ In the second class, the commencement of the attack was always preceded by a slight deviation from health, perhaps for a day or two before. The disease was then ushered in by a vitiation of taste, nausea, and an increased sensibility to cool air: in some, alternate heats and chills; and in all there was a dimness of sight, with headach, which was not so intense or deep-seated as in the other class of patients. There was also a slight confusion of thought, with considerable languor, achings and pains of

“ the knees and loins. The countenance was
“ rather dejected, the eye-ball full, the pulse
“ small and quick, from 100 to 120 ; the degree
“ of heat felt moderate, but when closely pressed,
“ it conveyed a caustic sensation to the hand, and
“ the skin was clammy with cold sweat. In some
“ the tongue appeared at first moist and smooth,
“ without papillæ, it would then become dry and
“ rough, in some white and slimy, and in others
“ so natural, that nothing could be drawn from it.
“ The state of the pulse also varied from quick and
“ weak to a natural pulsation. The pains and
“ headaches in general remitted during the day,
“ and became worse at night. The sleep was
“ sometimes disturbed, and the patient would be
“ heard muttering to himself; but in no instance
“ did it arise to the degree of delirium observed in
“ the other class. It was remarked, that the more
“ this fever assumed the intermittent type, there
“ was the less danger in proportion; nor was it of
“ such long duration as when it preserved the
“ strictly continued form. Sometimes on the fifth,
“ but oftener on the seventh day, and though the
“ patients continued languid for a considerable
“ time, convalescence eventually took place.
“ This favourable change was observed in the
“ countenance, tongue, pulse, and state of ap-
“ petite.

“ All the individuals of a mess have been succes-
“ sively affected with the same train of symptoms,
“ as have been detailed, peculiar to the latter state
“ of the disease. Many of them so slight, as not
“ to be confined to their beds. To this species
“ of fever, I conceive, the denomination of typhus
“ mitior to be most applicable; not that I would
“ imply by this any specific difference in the two
“ sorts of the disease, but merely a variety.”

This

This distinction, taken from Dr. Cullen's Nosology, is superfluous. There is no difference in the nature of the fever, it is only a more aggravated, or milder train of symptoms; *plus vel minus non variat speciem*.

" As soon as the fever appeared, and the patient
 " complained, it was sometimes suppressed at
 " once, by the administration of an emetic and sudorific. But where the contrary happened, he
 " was sent to the sick-berth, where his body was
 " washed clean with soap and water, and if not in
 " a condition to sit up, he was put into a clean
 " hammock, furnished with a clean bed, sheets,
 " and nightcap. The next object was, to cleanse
 " the stomach and intestines; and although nausea
 " and sickness did not always call for this, still it
 " was found indispensable from recent *ingesta*. This
 " evacuation never failed of being highly salutary,
 " by removing the crude and acrid contents of the
 " *primæ viæ*.

" The antimonium tartar. was the medicine which
 " I found most effectual in answering these purposes. It was given in small doses, after short
 " intervals, and repeated occasionally, till sickness, nausea, and, if the case required it, till full
 " vomiting was produced. If it was intended that
 " this medicine should operate by stool, the doses
 " were made smaller, and the intervals longer;
 " but if it had not this effect, a purgative was given
 " after the emetic.

" The next object was to excite universal sweating; this intention was also best answered by
 " small doses of antimonials, combined with
 " opiates, and rendered diaphoretic by aq. am.
 " acetat. which I found determined its operation
 " to the surface of the body, particularly when assisted by frequent draughts of mild tepid liquors,
 " rendered

“ rendered grateful by balm or sage. To answer
 “ this purpose also, and to keep up a soft, moist,
 “ state of the skin, several other remedies were
 “ employed, particularly neutral salts, pulv. epicac.
 “ comp. pulv. antim. and camphor, &c. Fomen-
 “ tations were frequently used to the extremities,
 “ which, towards the latter stages of the disease,
 “ were below the natural standard of heat; and,
 “ in fact, every other means were employed to
 “ favour the production of free and universal sweat-
 “ ing. When this could be accomplished early in
 “ the fever, it seldom failed in procuring a remis-
 “ sion, so as to admit a free administration of bark,
 “ which I never found admissible, until a consider-
 “ able apyrexia had taken place, it was then given
 “ with wine and opium, as occasion required. Se-
 “ veral of the patients could not be prevailed up-
 “ on to take the bark in any form; when this
 “ was the case, I really did not observe that the
 “ cure was in the least retarded, as wine was
 “ agreeable to all, and at all periods. In the very
 “ advanced stages it was necessary to give wine,
 “ the quantity being regulated by the effects which
 “ it produced. When given in this way, it never
 “ failed in raising the pulse, and powerfully support-
 “ ing the vis vitæ.

“ *Opium* seems to have an effect analogous to
 “ that of wine, and from it I have experienced
 “ the most salutary effects in relieving low deliri-
 “ um, depending on debility, and the disordered
 “ state of the *sensorium*: and when given with
 “ æther, musk, or camphire, it considerably mi-
 “ tigated the spasms and tremblings of the ex-
 “ tremities, which were usual in the advanced
 “ stages of the disease.

“ But in some patients to whom opium was ad-
 “ ministered, it produced nausea, frequently aggra-
 “ vated

“ vated the headach, and disturbed the sleep. In
“ these cases the powder of opium was made into
“ an ointment, by mixing it intimately with hogf-
“ lard, and was diligently applied externally by
“ means of friction. When it was rubbed in, in
“ this manner, it had the most desired effects in
“ producing sleep, allaying irritation, removing
“ the spasms, and obviating the inconveniences
“ which arise from its internal administration.

“ For relieving the coma, headach, and local
“ pains, epispastics were very effectual. In some
“ cases it was found necessary to repeat them, and
“ with incalculable relief, particularly in pain and
“ stricture of the thorax. In three cases, where
“ there were uncommon irritability of stomach,
“ attended with violent vomiting, a blister to the
“ gastric region completely removed this trouble-
“ some symptom, after saline draughts in the
“ state of effervescence and opiates had been tried
“ in vain.

“ During the whole course of the disease there
“ was a preternatural retention of the fœces, which
“ required opening medicines; from experience, I
“ was induced to prefer laxative glysters, as pur-
“ gatives taken by the mouth were apt to occasion
“ sickness and vomiting. In cases of obstinate
“ costiveness, I was obliged to use calomel.

“ I found the *sp. æther. nitros.* highly grateful
“ for quenching thirst, when much diluted. It
“ seemed to give relief to painful flatulencies. The
“ dose was twenty drops, in a cup of barley water,
“ every hour. Cold water was much desired by
“ many, which was always indulged.

“ Alleviation of symptoms was in general af-
“ farded by the use of cold water; the body was
“ frequently imbrued with cold vinegar and water,
“ unless when increased perspiration, or low pulse

“ forbade it. The patients seemed pleased and
“ refreshed by this practice. The cold aspersions
“ had a considerable effect in moderating violent
“ heat, relieved vomiting in a few cases.

“ After the disease was removed, a great degree
“ of debility, with impaired appetite remained,
“ more especially in protracted cases; and the
“ intellectual faculties were sometimes suspended
“ for a few days. To assist the appetite, I gave decoct. cinchon. infus. gentian.
“ columbo, &c.

“ In concluding these few remarks, I am perfectly
“ aware, that the great success which we have
“ met with in this disease, depended much on the
“ attention which was paid to the appearance of the
“ first symptoms, which afforded often an opportunity
“ for cutting it short, or at least obviating its danger.
“ At the same time the most perfect cleanliness, and
“ pure air, was attended to with punctuality, and
“ every thing removed that could aggravate symptoms.
“ At the same time, Captain Sawyer, and the gentlemen
“ of the wardroom, humanely allowed the sick
“ fresh diet, and other dainties from their tables,
“ besides a liberal allowance of port wine, porter,
“ &c. which I conceived necessary for the convalescent
“ state.

“ I have not as yet said a word on the means of
“ prevention that were used, for a very sufficient
“ reason, because little more could be done in addition
“ to the ordinary œconomy, and the high discipline
“ of the ship. For had cleanliness, and the most
“ scrupulous attention to the comforts of the ship’s
“ company been sufficient to preserve health, the
“ *Russel*, I will venture to say, never would have
“ been sickly. I may add, that in wet and moist
“ weather, or when the ports could not

“ not be opened, clear burning stoves were distributed in every part of the ship, and windsails kept in order, with every regard to cleanliness in person and clothing, warmth, and dry decks. The patient on the first indications of attack, was moved to the sick-berth, which was well ventilated, where he remained till the *sweating* process was over, or a complete remission obtained. He was then sent to a convalescent berth until fit for duty. If, however, he was not relieved in the early stage, he was transferred to a ward appropriated for the worst cases, and moved to the convalescent berth in his turn. By these means the mild and severe cases of the complaint were kept separate, and thus the atmosphere was less affected from over-crowded apartments. When sufficiently strong for duty, they were again well washed, all the clothing and beds returned to them, after being well scoured with soap and hot water, that no danger of infection might be communicated to others.”

“ We have now only seven in the sick list in a convalescent state; one case proved fatal out of fifty, twenty-four of whom went through the most aggravated form of the disease. The person that died was previously debilitated from confinement in a jail, being an offender. Torbay, April 6, 1800.”

The condition of the *Russel*, at the above date, augured a very speedy destruction of the existing contagion; but the respite was of short duration. The weather became cold, tempestuous, and rainy, with an easterly wind, always unfavourable in such situations,

situations, equally accelerating the disposition to fever, and relapse, and retarding convalescence.

This state of the weather, with north-easterly winds, continued for days without intermission, and the cases of fever increased in proportion. It had before chiefly attacked raw landmen, or young marine recruits recently embarked, but now became more diffused among others, till sixty was the number ill. Mr. Spry, a young man, and surgeon's mate, was among the sufferers, and the whole medical duty devolved on Mr. M'Grath. The cases, though numerous, were however much milder in degree; but as there seemed no prospects of a change of weather, the *Russel*, on the 24th of April, was ordered to Plymouth, and landed her sick, about seventy, but most of them convalescent.

It was however observed, that the men who had passed through the fever, and remained on board, were more quickly recovered, with fewer relapses, than those sent to the hospital. A ship labouring under a general contagion is a most distressing scene, more especially when the greater part of comforts and nourishment are charities supplied by officers. This ship, like many we have seen, must have sustained a large mortality, if considerable quantities of diet had not come from that quarter. The ship's wine is a meagre sour compound, very unfit for medical purposes, but still worse when there is no fresh meat to recruit the exhausted juices of the emaciated typhoid convalescent. But the number of sick was now so great, that no private fortune was equal to support them; the last resource was an hospital, and consequent defection of men, from the facility of being entered as objects for invaliding, which in its turn leads to indolence, feigned complaints, calling
up

up of old hurts, and the loss of energy in both body and mind.

About the 12th of May, the fever did not attract much farther attention. In July the Ruffel returned to port, in perfect health; and some days after I had visited her, a woman came on board, probably with fever upon her, who died next day. Mr. M'Grath adds, " I have reason to believe, " that the contagion was in some degree renewed " in the ship, during the six days which we lay in " Cawland Bay last month. A woman, who " came on board to see her husband, was seized " in the evening with fever, the most severe " symptoms of typhus, and died next day with " signs of great putrescency. Soon after this, I " believe two days, her husband was taken ill, and " passed through the usual stages of typhus: after " him, a woman was infected, who had attended " the one who died. The disease from that time " extended to seventy others, of whom one died, " the fever being mild in its nature, though occasionally aggravated by bad weather at sea. These " were all cured on board."

Mr. M'Grath makes the following observations on fumigation: " Without wishing in the least to " detract from the merit and philanthropic intentions of those gentlemen, who have favoured " the public with their opinions on the superiority " of fumigations in exterminating contagion, I " would beg leave to observe, that the happy " effects they attribute to it, might be said to be " more the consequences of increased attention, " and adoption of free ventilation, as in all the attestations in favour of this plan, which I have had " an opportunity of reading, this appears to have " been assiduously attended to. I would most certainly venture to give it, as my opinion, that

" no

“ no occasion can possibly occur, which can
“ justify the resumption of this practice, which
“ would not equally authorize a dispensation of it.
“ However, if in general it be considered not
“ easy to determine concerning the propriety of
“ such proceedings, it is far from difficult to fore-
“ see the pernicious consequences which may at-
“ tend this process; as by totally trusting to it,
“ the guardians of health, and other attendants,
“ are rendered negligent of the most important
“ part of their duty. Believing it therefore a
“ question at best arduous in theory, and in the
“ practice very critical, it would become us to
“ renounce this ‘ mysterious antidote,’ which ap-
“ pears to have gone on for a considerable time
“ past, with the deep silent flow of a steady stream,
“ without adequate observation, until happening
“ to meet a rift of rocks, which checked its
“ course, it grew more noisy, and attracted more
“ attention, whereby it will be gradually forced
“ out of its way by the superior efficacy of me-
“ chanical philosophy. When a line of distinction
“ shall be drawn accurately between the success
“ of the one practice and the other, I am satis-
“ fied no room will be left for doubting which
“ ought to be preferred.

“ To you, Sir, we owe the means of extricat-
“ ing ourselves out of the mazes of prejudice,
“ and intricacies of a misleading theory; without
“ which, we might have implicitly continued to
“ follow the steps of our ancestors, and servilely
“ have adopted their maxims and errors, and thus
“ ended our days without daring to think for our-
“ selves, or the welfare of mankind.

“ Upon contemplating the effects of ventila-
“ tion in arresting the progress of contagion, from
“ analogical reasoning, I could not help falling
“ into

“ into this reflection : If the observation of Natu-
 “ ralists be true, ‘ wherever a poisonous plant
 “ grows its antidote is found ; Nature is pretty
 “ uniform in her laws ; every thing which is gene-
 “ rated has its opposites ; there is no evil without
 “ its corrective ;’ and she certainly produces a
 “ remedy for that malady in the pure air, without
 “ having recourse to a doubtful and complex ex-
 “ periment, unsupported by satisfactory or chaste
 “ testimony. Happy it is perhaps for society,
 “ that the human mind is so constituted, that it,
 “ in general, meets with new propositions with
 “ great caution. You have said, that nitrous
 “ fumigation came in a questionable shape ; and
 “ you have proved that its supporters are incapable
 “ of explaining themselves.

“ As your labours are now universally valued, I
 “ look to your laudable activity with a pleasureable
 “ anticipation of the result ; and heartily congra-
 “ tulate you on the discussion which is now abroad,
 “ in which the interest of the country is so deeply
 “ involved.”

The following remarks are made on the *affusion*
 of *cold water*. “ I have had ample experience of
 “ the beneficial effects of cold ablution in fevers ;
 “ and from my own observation will venture to
 “ pronounce it a safe efficacious remedy, when
 “ the restrictions so judiciously laid down by Dr.
 “ Currie are attended to. And I can affirm with
 “ confidence, that no evil of any magnitude ever
 “ arose in the course of my practice from its
 “ adoption, even when catarrhal symptoms were
 “ present.

“ I have experienced, that the earlier this re-
 “ medy is had recourse to in the disease, in like
 “ proportion it will be found the more effectual in
 “ arresting the progress of fever.

“ Several cases have yielded to the cold lavation
“ without the assistance of any medicine whatever ;
“ but I have found that the prudent administration
“ of evening anodynes powerfully assist. In the
“ more advanced stages, where the skin was dry
“ and impervious, with more or less delirium, and
“ where a cuticular discharge could not be pro-
“ cured by the most powerful sudorific medicines ;
“ by throwing a bucket of cold water over him,
“ rubbing him dry, and laying him between the
“ blankets, I have known a comfortable glow of
“ heat to succeed, followed by a gentle and salu-
“ tary perspiration, first appearing about the fore-
“ head and neck, and then by administering bland
“ diluent drinks, such as balm or sage tea, the
“ diaphoresis would become general, the confu-
“ sion of thought disappear, and the patient would
“ fall into a calm and refreshing sleep, which
“ sometimes lasted for hours. He would then
“ awake much recruited, with an abatement of all
“ the symptoms ; and in several a complete reco-
“ very took place under these circumstances.

“ Indeed, invariable success has attended my
“ endeavours ever since I began to adopt this
“ mode in a large scale ; and no untoward circum-
“ stance or subsequent inconvenience have oc-
“ curred in my practice, which is now so per-
“ fectly familiar that I have the utmost confidence
“ in it ; and feel justified in pursuing it, from
“ principles of humanity as well as of science. In
“ some of the milder cases I have known one
“ bucket of water poured over the head and body
“ produce such a shock, that the redundant
“ heat and increased velocity of the circulation
“ immediately fell to the natural standard, and
“ never more returned. The disease, by this
“ means was instantly cut short, which otherwise
“ might

“ might have been protracted to an uncertain duration with increasing malignancy.”

In some part of Mr. M'Grath's account he remarked, that the fever in many instances, latterly, was attended with catarrhal symptoms; but notwithstanding the typhoid type preserved its form; and Mr. M'Grath wisely continued the method of cure which he had hitherto conducted with success. This disease, at the time, attracted a considerable share of attention from officers as well as surgeons in the fleet; but, I believe, without either the Captain or Surgeon of the *Russel* shrinking from their opinion; and their triumph in the end was complete.

I cannot forbear to mention the punctuality of cleaning and washing the clothes and bedding of the sick in this ship during the prevailing fever. It would be well for naval service, if we could enforce such attention in the hospital departments. I suspect little benefit is going on for the sick, when I observe any of the officers in these institutions sitting at a table of green cloth, with a huge bale of papers before them, and dictating, with all the formality and pedantry of writing-masters to their clerks.

The charity of Captain Sawyer and his officers in this affliction, kept pace with the able and benevolent arrangements of the surgeon.

As somewhat connected with Mr. M'Grath's account of the typhus on board the *Russel*, I subjoin the following history of a contagious fever, by Mr. Brown of the *Roebuck*. By the people who had been sent from that ship to Plymouth hospital, I suspect the disease was carried on board the *Russel*; if not in their emaciated bodies,

at least in foul clothes that had remained in the bed-house, *unventilated and unwashed!*

“ Sir,

Roebuck, Plymouth Sound,
19th January 1800.

“ The late prevalence of a contagious fever
“ of great virulence on board this ship, having
“ afforded me an opportunity of making some
“ practical remarks, which may be of use on
“ similar occasions, I cannot deny myself the
“ honour of laying them before you; though I am
“ very far from flattering myself with the possibility
“ of proposing any thing new to a person who has
“ already so amply enriched the Medical Science
“ with valuable discoveries and improvements in
“ all its departments.

“ This formidable disease made its first appear-
“ ance on board this ship early in December
“ last; and certainly had its origin from the
“ loathsome filth and impure air, which were
“ the natural consequences of having above four
“ hundred Russian soldiers on board since the loss
“ of H. M. S. L’Espion on the 17th of No-
“ vember*.

“ An early intimation of its nature was afforded
“ me in this circumstance, that of four patients
“ who had suffered the evacuation of bleeding,
“ purging, &c. about the first of the month for a
“ catarrh, the inflammatory symptoms of which
“ ran very high. These were among the first
“ who were seized with the disease, and of these,
“ two afterwards died, one on board, and the
“ other at Haslar hospital.—As it was here
“ plain that the evacuations, by inducing debility,
“ favoured the attack of the disease, I concluded

* The Espion was lost on the Goodwin Sands, on her pas-
sage from Holland, with Russians on board.

“ that

“ that the contagion itself operated by debilitating,
“ for which reason my plan of cure from the first
“ was to stimulate, and experience has proved
“ with what propriety.—Having had occasion to
“ observe, whilst on board the Niger, in the year
“ 1796, the inutility of the new prophylactic fumi-
“ gations by means of nitrous acid gas, a circum-
“ stance which your able pen has already made
“ known to the public, I never on this occasion
“ made use of them; for I conceived, that in
“ addition to their having no power over con-
“ tagion, as was proved by the ingenious Mr.
“ Burd, then surgeon of that ship, under your
“ own eye, they might even prove injurious, by
“ supplying for a time an atmosphere very deficient
“ in the proper proportion of oxygene; the want
“ of which necessary stimulus, by inducing a de-
“ gree of debility, might predispose (as the eva-
“ cuations had done) to the disease.—The
“ means of prevention which I preferred were,
“ ventilation by fire and wind-sails, dryness, and
“ cleanliness.—The advantages resulting from
“ these are so well understood, and have been so
“ forcibly inculcated by you, Sir, to the great
“ improvement of health in the naval service, that
“ it is unnecessary to expatiate on them, I can
“ only assert that they proved in this ship perfectly
“ adequate to the extermination of contagion; the
“ virulence of which cannot be disputed, when
“ it has been mentioned that sixty of our ship’s
“ company were infected with it in the course of
“ three weeks; and that during that time three
“ successive loblolly-boys, and as many attendants
“ on the sick-berth had the fever in its worst
“ form.—The first symptoms were, low spirits,
“ aversion to motion, and every kind of food;
VOL. III. R “ alternate

“ alternate cold and hot fits, with vomiting, profuse sweat, and great prostration of strength :
“ violent headach, and some confusion of intellect soon followed ; the pulse was unusually feeble
“ and languid ; the tongue dry or covered with black fordes. In other cases the attack was
“ more insidious ; so much pain in the breast, cough, and dyspnœa being present, that it might
“ easily have been taken for common catarrh. In doubtful cases of this kind I abstained from
“ the use of stimulants for the first day or two, by which time the disease seldom failed to shew its
“ true features.—A high degree of pain, amounting sometimes to exquisite torture, was felt
“ through the lower extremities, particularly about the knees ; in advanced stages of some of the
“ worst cases, this was always characteristic of danger, and might be supposed to depend upon
“ the paucity of the fluids insufficiently stimulating the sides of the vessels, and thus creating painful sensation.

“ Delirium was a common and often an early symptom.—My practice was, after causing the patient to be washed with warm water and soap, (if circumstances could allow,) and clean linen put on, to give an emetic, and after its operation opium, in doses suited to the degree of the disease. No other evacuation, a gentle laxative excepted, when costiveness prevailed, was ever used, the cure being entirely trusted to opium and wine. Peruvian bark was tried at first, in some cases ; but I found it so much inferior to opium, even when it could be retained in proper quantity on the stomach, (a circumstance which seldom happened,) that I afterwards reserved it entirely for the convalescent state, where it certainly had merit.

“ I have

“ I have one remark to make on the use of
 “ tinct. opii in delirium, which, in many of the
 “ cases I had to deal with, was of that furious,
 “ violent kind, which has often been supposed to
 “ depend on inflammation of the brain, errone-
 “ ously : for, as it yielded with the other symptoms
 “ to the general remedies, there is no founda-
 “ tion for supposing it to depend on a different
 “ cause.

“ The remark is, that if tinct. opii is given in
 “ moderate doses often repeated, it seems to have
 “ no effect on this symptom, but if given largely
 “ and at once it speedily removes it. This was
 “ first suggested to me by accident; a patient of
 “ a debilitated habit, from a recent flux, on whom
 “ the contagion made an early and deep impres-
 “ sion, had for three days been so outrageous, that
 “ it was difficult to keep him in his hammock,
 “ was at last reduced to a state of such extremity,
 “ that, to prevent the fatal event that seemed fast
 “ approaching, I administered a dose of gtt. lxxx
 “ tinct. opii in a glass of rum, three hours after
 “ which I was astonished to hear him talk sensibly ;
 “ after another hour he had gtt. xxxv tinct. opii,
 “ soon after which a sound sleep came on, which
 “ lasted till morning, when I was much pleased
 “ to find that his only complaint was great debi-
 “ lity.—Fever never returned.—Experience in
 “ three other cases on board, (in one of which it
 “ was absolutely necessary to give 150 drops of
 “ tinct. opii at one dose to preserve life,) has
 “ since tended to prove the truth of this remark.

“ It was only in desperate cases, however,
 “ where there was every reason to expect death,
 “ that I had the temerity to use so large a dose of
 “ this invaluable medicine, the virtues of which,
 “ in low fever, cannot be sufficiently celebrated ;

R 2.

“ for,

“ for, in general, it was not necessary to exceed
“ cl. drops, in divided doses, in the twenty-
“ four hours, supporting the patient at the same
“ time by a liberal allowance of wine, (a bottle
“ per day in bad cases,) and such articles of diet
“ as could be relished; where wine was disliked,
“ good hot rum-punch in equivalent quantity was
“ substituted with equal benefit.

“ This practice was so very successful, that I
“ have the satisfaction to say, that it never failed
“ in any instance, where it had a fair trial; for, in
“ each of the two cases which (out of sixty) ter-
“ minated fatally on board, an unlucky accident
“ conspired with the violence of the disease itself
“ to defeat my anxious endeavours towards a cure :
“ in the first, a quantity of rain-water getting
“ passage in the night through the seams of the
“ quarter-deck, (under which the sick-berth was,)
“ completely drenched the patient, (one of those
“ who had been bled on the first of the month,)
“ unperceived by the attendants, and from greater
“ suffering, unfelt by himself, the consequence of
“ which was so sudden an increase of debility, that
“ hiccup and constant vomiting came on imme-
“ diately, and death soon followed. In the other
“ case the disease had been reduced to a state of
“ convalescence so early as the third day, on the
“ evening of which the patient, elated no doubt,
“ with the prospect of returning health, had the
“ imprudence to participate so freely in the regale
“ of grog, which sailors at that period (Christ-
“ mas) indulge in with impunity, that death, from
“ exhausted excitability, was the consequence in a
“ few hours.

“ Upon the whole, it is my opinion that the
“ surgeon (prophylactic measures, such as have
“ been already mentioned, being properly attended

“ to by the officers,) who in this disease adopts the
“ bold plan of cure, which is founded on the
“ stable foundation of the Brunonian inductions,
“ will be able to effect more than has ever yet
“ been imagined by those who, applying their
“ knowledge of those laws by which the action
“ of inanimate matters on each other are regu-
“ lated, to the living system, have placed the pre-
“ vention of the disease, as well as the indication
“ of cure, in the decomposition of an unknown
“ something which they have supposed to be the
“ principle of contagion,

“ W. BROWN.”

MEDICINA NAUTICA.

THOUGHTS ON CONTAGION AND PREVENTION OF PLAGUE, IN A LETTER TO A PHYSICIAN.

Dear Sir,

Plymouth Dock, 1799.

IN one of your letters, I perceive you mention the partiality with which you suppose I had embraced the new doctrine of Pestilential Fluids, lately propagated by the ingenious American Professor Dr. Mitchell. But if you will again look over my second Volume you will observe that I have only announced it, as showing the fallacy of all preceding opinions on the subject, or spoke of it in such general terms, as by no means implied my conviction of its correctness. I see, from a late Number of the European Magazine, that other medical gentlemen think nearly as you do; and suspect that great calamities may befall the public service of the nation on that account. It is therefore credited that I have entered fully into the spirit of practice which the American theory prescribes.

You

You will readily agree with me, that a consistent theory of Contagion is a desideratum in medical science. Nothing had appeared on the subject that a modern physician could turn over with patience, so as to deduce from it any practical precepts. But a number of circumstances, at the present time, have concurred to point it out as a period very favourable to the investigation. The laws of the animal economy have lately, on the induction of experiment, been better known; the authority of great names, that often gave the semblance of matter of fact to ingenious hypothesis, has been thrown aside; which, joined to the improvements introduced by pneumatic chemistry, gave Dr. Mitchell the chance of producing something worthy of an inquiring age. The havock which the Yellow Fever has made among the British soldiers in the West Indies, and the repeated visits of a similar disease in different districts of North America, opened a large field for observation, which became doubly valuable as being conducted under a more correct medical philosophy. It will be well for human kind, if the knowledge acquired amidst those scenes of death and desolation, should be the means of preventing the importation of the plague into Europe, that at this moment is said to be raging on the shores of the Mediterranean.

The investigation of what is called *Marsh efflu-
vium*, with the assistance of the new chemistry, becomes a novel and interesting doctrine. The language of the ignorant, as well as the physician on this subject has been nearly alike indefinite: the common term putrefaction resolved every thing; yet so badly explained, that it seemed rather to imply a disagreeable impression on the organs of smell, than a process in nature that was

reducing animal and vegetable matter into simple elementary principles, ready to form new combinations. This ancient prejudice is still so difficult to be eradicated, that men who call themselves philosophers and chemists, contend for the preference of a recent prophylactic, because it decomposes the bad smell arising from substances undergoing their final decomposition.

It will not be doubted therefore, that Dr. Mitchell has gone as far as the present state of human knowledge could well conduct him: he has illustrated his doctrine by a variety of facts, curious and instructive, and drawn from sources not often explored by the medical adventurer. His defence of the manufacturers of soap and candles at New York, is a proof of what I have just advanced. There can be few readers but must be struck with the luminous arrangements of new materials in that work, or not charmed with the eloquence of its style. In detecting the origin of *marsh miasma*, and demonstrating its nature, Dr. Mitchell has been eminently successful. But in the investigation of *contagion*, he has not been equally fortunate; indeed the subject does not admit of it. It is no new idea, that all poisons partake of an acid principle: the bite of the mad dog, and the venom of snakes and serpents, have been all resolved to this quality. The present rage for chemical studies has not checked this propensity. Physicians, when they go a certain length, urged on by ardour of a favourite hypothesis, will return, in cooler moments, to the reflection that they are treating of the effects of various substances on the living system, which possesses powers within itself, not to be reconciled to the laws of chemical attraction. Thus we see much of the insufficiency of Dr. Mitchell's reasoning in the treatment of pestilential diseases,

eases, by attempting to neutralize the supposed poison in the body, by means of lime and alkalis. His prophylactic rules deservedly claim attention, but there is much fancy employed in his indications of cure. If it could even be made as clear as any problem in Euclid, that the cause of fevers is the *septic gas*, much would still be wanting to convince us, that substances of a contrary nature taken into the body for the purpose of forming new combinations, could put an end to the febrile state. The phenomena of fevers, are all sympathies which succeed one another in regular order; and the same associated train of actions, may be excited by widely different remote causes. The phrenitis, as it occurs in a robust peasant in England, is ushered in with symptoms very much like the attack of the West India endemic *causos*, in a strong and raw European stranger. Yet the practice in both cases would probably be very much the same; *evacuations, and all other means that speedily diminish excitement, till the disease is overcome, without danger of recurring*. An ague is best cured by bark; yet we have not learned that there can be any attraction between marsh effluvium and cinchona. If there was, it could in most cases avail but little, for the disease does not always appear for the first day or two, but often not for many days; and when the poison, be what it may, must be beyond the reach of any medicine, that could directly arrest it. In contagious fever, likewise the same rule obtains; the attack is often at the moment of being exposed to the tainted atmosphere, or infected body, or clothes; but it also, in other cases, only comes forth in a week or ten days after the infection is received. In the cure, therefore, we think Dr. Mitchell is less successful than in the prevention, and we should prefer taking our in-

dications

dications from the present condition of body, which in yellow fever direct the prompt means of diminishing excitement, by the largest bleedings that can be practised *.

In a paper published in our second volume, we are told of a practice similar to that of the American professor, having been successfully employed to an unusual extent in the plague, by Mr. Baldwin, the British consul in Egypt. I have not learned whether that gentleman is of the medical profession, which would enable him to observe much collateral matter of fact, in weighing opinions on this method of cure. But, be that as it may, it does not invalidate his testimony. The custom of anointing the body with oil, has not been confined to Egypt, or to the authority of Dr. Mitchell. Dr. Douglas Whyte, a surgeon in our navy, has used it in the yellow fever, as he contends, with complete success, and on a very large scale; although it is probable he followed it up, from notions of theory, widely different from what we have seen. It will, however, be a difficult matter to introduce this use of oil among British subjects; but the evidence on which the utility of it rests at present, is sufficient to claim the attention of the Navy and Army Medical Boards, if these gentlemen are not beyond the reach of instruction. Twenty-seven thousand men, composing the army of Sir Ralph Abercrombie, in December 1795, in the short space of two years, barely amounted to as many hundreds!!

* It is not yet clearly established, that *ammonia* will cure the bite of serpents. Nor are we fully assured that sulphur and vegetable alkali, or the *sulphurated hydrogenous gas*, which results from their union, are capable of preventing the dangerous effects of the *oxyd* of arsenic.

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The abundant use of soap and water in purifying clothing, and in personal cleanliness, must be proper in the opinion of every one. Were the custom of ablution, bathing, and anointing the body as general as they were in the days of Celsus, we might expect to see diseases arising from noxious exhalations of the soil, such as ague and dysentery, and those also which are called contagious, as typhus, either entirely prevented, or rendered so mild, as scarcely to require medicine.

Some time ago a paper made its appearance, asserting, that the yellow fever of North America had been imported from the West Indies, from the authority of the College of Physicians at Philadelphia. Such an opinion as that, at the time it was published, we then supposed might originate from political motives, as calculated to quiet the minds of the inhabitants, and to prevent emigration. But an opinion of this kind gaining ground, however strongly it might tend to enforce the laws of quarantine, must in the end be productive of dismal consequences, as it deludes the people into a false security, and withdraws the attention of the mind from the real source of the calamity, *some peculiarity in their own seasons, and the soil of the district.*

If, however, it was the real opinion of these physicians, that the yellow fever was of foreign extraction, either the regulations of the magistrates have failed in preventing a return; or they must now explain the reason, that in one season of the year *only* it makes its appearance. Much more just and candid do we think the advice which Dr. Mitchell has given his fellow-citizens, when he told them to look at home for prevention, if they inclined to be safe,

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The dread of importing the yellow fever into this country, appears to me to have excited a very unnecessary alarm. The yellow fever appeared at Granada in the summer of 1793, and it was soon decided, that the contagion had been brought from the settlement of Boulam, by the Hankey of Liverpool. The account was quickly sent to England, to beware of this ship *. She came home under the convoy of Sir A. Gardner; and I was the surgeon of the Vengeance, one of the squadron.—This vessel happened to be dismasted in a squall, and we took her in tow. We were now in colder latitudes, and from having heard of the state of the Hankey at the time we sailed, when consulted by Sir Charles Thompson, about the propriety of trusting our carpenter's crew to repair her damages, I did not hesitate to say, that I thought them in no danger. Sir Charles, after this went on board and examined her himself, for he possessed that nobleness of soul, never to trust a seaman's health in a

* In my first volume, Art. Yellow Fever, I mentioned some of these circumstances respecting the Hankey. Mr. Wadstrom's Essay on Colonization, part ii. has just fallen into my hands, and my general statement is more than strengthened by what he says. It appears that the Hankey's fever at Boulam was either of the remittent kind, peculiar to that part of Africa, or a fever, probably typhus, brought out by the ship from England. I formerly said, that there was no fever in the Hankey, when Mr. Smither's, surgeon of the Charon, visited her at sea; there had been none for some time, nor was there any afterwards. The deaths, in fever, at Boulam, were only twenty-six. On the whole, it appears, that the opposition to the abolition of the slave trade, at Grenada, had given birth to all the malicious reports against the Hankey, because she had returned from a service directed to that benevolent and christian purpose. But medical enquirers ought to have been above those selfish trammels, in which gain intraps narrow minds, and cold blooded animals. The passengers that embarked in the Hankey, were only fifteen men and women, with four children; I cannot learn how many of these died on the passage.

situation

situation that he could not face himself. Nothing bad followed, and we could not help smiling at the rumours that were spread at home, and the fears which prevailed in consequence. Rules of quarantine were immediately issued, which, I believe, are still in force; and, strange to be told, the Hankey was ordered to be sunk!! We have no information of the medical opinions which gave birth to these measures and precautions. But if any medical authority could justify them at that juncture, all experience, and more cool investigations since, shew the whole to have been groundless. When a nation is trembling for its safety, under the horror of impending contagion, it ought to select undaunted physicians, as it would consult firm ministers on the invasion of an enemy. Such men as Moseley and Jackson, whose nerves are unaccustomed to shake at every breeze, would have been able counsellors at such a crisis. The peace of society can never be certain, if it is to be assailed by every breath of infection like the present; and mankind have a right to expect better things from the medical profession.

From what we have seen or read, there would seem to be a certain degree of excitement in the human body, beneath which the yellow fever and plague will not make their appearance. This degree of excitement depends chiefly on the stimulus of heat in the atmosphere; for both fevers commence in the sultry months, when the temperature is near or above 80° of Fahrenheit, and subside as the cold season approaches. This effect of the weather indicates important practical treatment, and would suggest many valuable arrangements in the conduct of prophylactic means, should ever the pestilence appear in these kingdoms. In the yellow fever, a *state of body* is also required, without the presence of which it cannot attack; but this has not been distinctly

distinctly marked by writers on the plague. This disposition is called the unseasoned raw European temperament in the West Indies. The climate of North America, the extreme cold of the winter, being so great a contrast to the heat of the summer; produces a similar condition in the bodies of the natives; and for this reason, they are equal sufferers at Philadelphia with European strangers. Negroes, or Creoles, who have lived in the islands, are exempt from the yellow fever; but after being some time in England, and returning home in his Majesty's ships, they have uniformly been observed among the first who were attacked, and more severely affected than others. The low temperature of our winters therefore induces a state of the constitution, an accumulation of *excitability*, or *sensorial power*, that renders these natives of the torrid zone more susceptible of stimuli than they had been before, and with this is produced that disposition to be affected at their return by the endemic fever. These remarks have been confirmed to us by a variety of instances during the present war.

The accounts of the plague appearing on the Barbary shore, you must have observed from the public papers, have attracted the attention of Government; and you have also heard, that a number of physicians have been consulted by the Privy Council, probably with a view to learn, whether the accumulating medical knowledge of the day had acquired any thing new on this subject, that so nearly interests society, and that might aid the police in regulating quarantines.

It might have been expected that a nation which enjoys so large a share of the Levant trade, and
constant

constant communication with different ports in the Turkish dominions, should have been completely prepared for preventing the importation of this contagion; but I am much afraid the solemnity with which the laws of quarantine ought to be obeyed, have been very much trifled with since they were extended to West India traders, under the impression of stopping the yellow fever. Should any evasion of the appointed forms of purification ever take place, where real infection is present, it will probably be through some channel least to be apprehended, and the early stage of the disease will be cautiously concealed to elude punishment. But before one real plague shall make its appearance, we shall have rumours of many false ones.

A very odd scene has been lately acted on one of the London wharfs. Two men employed in clearing a vessel returned from the Mediterranean, died suddenly. An alarm was instantly spread, with all the credulity of the English character, that the plague had broke out. A physician was ordered by the Lord Mayor to enquire into the nature of the disease, who, in his report, made use of some ambiguous expressions, and served to preserve the dread. It, however, was at last satisfactorily explained, that the two men died of inflammatory complaints, unconnected with pestilential contagion. But mark the system of prevention that took place during this alarm; the goods were subjected to what, not to purification, but to fumigation, in order to suffocate this captain-general of the troops of death, whether concealed in a bale or a hamper, as you have known a servant girl smoke a thief that had taken refuge in the chimney. The consequence was such as you would have looked for, the valuable merchandize has *been spoiled for sale*. This is not all;
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it is reported, that the underwriters have threatened a prosecution against the advocates for fumigation; and the gentlemen of the long robe will probably employ their eloquence to denounce judgment on those chemical affinities and combinations, which their medical friends with unguarded confidence had not expected to take place.

The Levant merchants, hitherto wise from experience, and intent on their gains, had cautiously avoided the exposure of their delicate stuffs to the fumes of brimstone; because they observed, what every old woman knows, that the effect which these vapours have upon silk, whether raw or wove, was to alter the colour of the piece, and decompose all the fine dyes that are fixed in them by alkalis. For these reasons it had been deemed sufficient, for prevention and purification, to unpack their bales, and expose them freely to the air. But if such baneful effects were produced by the fumes of sulphur, the vapour of the nitrous acid was still more corroding, as burning and turning yellow all animal and vegetable substances, gold and silver lace, that may be interwoven with silk, and decomposing all metallic oxyds employed as colours in the stuff. (Vide Fourcroy's Philosophy of Chemistry.) Such has been the fate of fumigation, at the chemical period of the eighteenth century! It is our duty to hold up the fact as a beacon for the safety of naval service*.

I might

* The muriatic acid gas of Guyton Morveau, the celebrated French chemist, which has been for some years extolled in France, as correcting and destroying contagion, though with as little justice as the nitrous in England, was really the invention of Dr. Johnstone of Worcester, as appears from the *Treatise*

It might now be asked, whether the prophylactic means are not weakened, and the security of prevention, overthrown by this occurrence, as it can never be expected that commercial people will submit to a process that destroys their property. Merchants have a right to be indemnified against such profligate quackery; and I hope they will find more skilful advisers in future. There has been a degree of obstinacy beyond the example of former times, in the conduct of those gentlemen, who gave their faith to the new modes of fumigation. They have treated even the most obvious and palpable facts which opposed it as delusion and prejudice. Yet, if you look over their lists, you will perceive that they have been sitting at ease in their arm-chairs in London, and only heard of the trials, or trusted reports from experimenters, who appear to write for the purpose of exposing their credulity. It seemed therefore necessary, in order to check their career, that some signal blunder should be committed, that might confound their devices, and humble their presumption. We now predict, that more salutary arrangements, and a more correct system must arise from this mass of vapour, smoke and confusion.

As it is not our intention to pull down an edifice, without erecting something in its place, you shall have, in as brief a manner as possible, what I conceive to be the most effectual plan for public security at this crisis.

tise on the Malignant Angina, printed at Worcester in 1779, by his son. The hint for employing the nitrous vapour was evidently taken from that process. Dr. Johnstone senior employed it so early as 1747. See his Treatise on Putrid Fever.

"SIC VOS NON VORIS APES MELLIFICATIS."

The port of Falmouth, as being situated at the extremity of the island, with a secure and commodious harbour, would appear to be the most eligible station for all ships and vessels to undergo quarantine ; and, if infected, to pass through forms of purification. The trade of London, and all places on that coast ; of Bristol, Liverpool, Glasgow, &c. could all touch here, without incurring much expence or inconvenience. A port remote from the metropolis, it is evident, ought to be selected for this purpose, for while you extend the sphere of security, the means of prevention could be more promptly and decisively employed. From what has already happened, it is easy to conceive the panic that would be instantly spread, on the plague appearing on board a ship in any part of the river Thames. I therefore propose, that at Falmouth all ships from the Levant, with their cargoes, people, passengers, clothes, &c. if necessary, should undergo a process of purification, hereafter to be mentioned.

In all parts of the Turkish dominions, to which our ships resort, it is supposed there are British consuls of trade on the spot, who can with certainty decide on the safety of the cargo, and the absence or presence of the pestilential fever in the town or neighbourhood where the vessel loads, so as to regulate the bills of health.

The infection of the plague could only be imported into this country, by a person labouring under actual disease, or articles that have been in contact with the diseased body, or its exhalations. These articles might be referred to bedding, clothing, and merchandize, which consists of silk and cotton, wool and hair, or cloths made from all these ; feathers, furs, skins, leather, &c. To all these we know, that infectious matter will adhere
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for a length of time. It is not even decided what length of time is required before the matter of infection, if it can be called such, is to be deemed inert, unless exposed to the pure atmosphere. All these substances, except cotton, are of an animal nature; and I think I am justified from observation, that to animal substances chiefly, infection adheres. They seem to afford it a secure nidus, or lurking place; where its virulence would appear to be increased, and acting with more certainty than even the diseased body itself. The danger of piling beds and blankets, and wearing apparel of woollen cloth together, even for a night only, is certainly no uncommon occurrence. Whether this fact could be explained by any chemical analysis of animal matter is another thing. Some pneumatic pathologists might tell us, that infection consists of a base derived from the animal body, and the acidifying principle which it attracts instantly, on a bale of polluted beds or blankets being exposed, and thus becomes a poisonous acid. This is Mitchell's doctrine, supported by some strong analogies. The plague has been said to have seized a person opening a bale of goods, almost instantly; and we have known typhus, with equal celerity, communicated to a washerwoman moving a lump of foul bedding; and to seamen while lashing up the hammocks of their messmates to be sent to an hospital*.

It being admitted that infection is propagated and extended in this manner, it must at the same

* Is the Simoom blast, a hot wind which is met with in the deserts of Africa, and fatal to animal life, any how allied to the nature of marsh effluvium?—*Vide BRUCE'S TRAVELS.*

Why does Dr. Pearson prefer *nitrogen gas*, the *septous gas* of Dr. Mitchell, to other elastic fluids for preserving vaccine matter?

time be accompanied with some portion of excrementitious matter which rises from the human body with it, that acts as its vehicle, or menstruum, if you will. To wash it off by plentiful ablution, with soap and water; to exhale it by the dry external air; to volatilize it by artificial heat; to smoke or suffocate it by fumigation, or to neutralize it by chemical combination, are the various intentions of different purifications employed against contagion. Where the two first can be practised, they are the most eligible; because they give the idea of delicacy and cleanliness at the same time. All fumigations are the offspring of superstition and quackery, because nobody has yet demonstrated the chemical nature of infection. But artificial heat may be useful, as it dries and dissipates any portion of animal effluvium which may have come from the body labouring under plague.

Let us therefore suppose that a ship arrives in England, from a port where the pest was raging, and that there is a necessity of passing her cargo through the ordeal of purification, for the satisfaction and security of society. In many cases a warm dry air, not exceeding our summer heat, will speedily carry off every noxious particle or unwholesome smell; for it is to be expected that some moisture may be present, at least an approach to dampness at the same time. The poison cannot retain its activity, when exposed a few hours to the open air, and a dry sunshine. This is daily proved in all well-regulated hospitals, and sick chambers; where the daily exposure of the whole bedding, and shifting the body linen, effectually check the progress of the most virulent distemper. But as immediate recourse to a dry external air may not always be practicable, we

must therefore look for security from artificial heat, which can even be more depended upon; because we can increase it to a greater degree, keeping constantly in our minds the delicate texture of silks; velvets, or other perishable commodities which we may have to deal with.

I must therefore propose that warehouses should be so constructed that the whole cargo of a ship might be landed at once; whatever species of goods, capable of harbouring infection, she may have on board. The walls of the building should every where be pierced with flues for conveying heat alike to every corner from top to bottom, from subterraneous fires. Metal flues, something on the principle of Brodie's stoves, might be fitted to answer this purpose, that the united effect of the whole might produce the degree of heat wished for. A heat amounting to 110. of Farenheit would be sufficient, and never to exceed 120 of the same scale. The fire-places, chimnies, and flues should be so contrived, that not a particle of smoke or vapour could make its way into the inside, so as to hazard the quality, or soil the most delicate stuff. The whole building should be framed for the purpose of confining heat; that the necessary degree may be raised with the smallest quantity of fuel possible. My old ship-mate, Count Rumford, might be able to give us much useful assistance in this business.

All bale-goods, bags of cotton, and other merchandize, might be so disposed on open shelves, that the heat could speedily penetrate the very heart of them. The length of time for submitting them to this temperature must be judged of from the bulk; but that would soon be known by experience. When this heating process is finished, the windows of the building, in a clear day, should

be thrown open, which, by the perfusion of the common atmosphere, should terminate the purification.

At this station for quarantine washing-houses should be erected for the purification of the seamen's bedding and clothes, or those of passengers. This would be most effectually accomplished by soap and water; but that species of wearing apparel that is liable to be injured by scouring may be exposed in the hot-house.

In the mean time, some of the naval stores of the ship should also pass through the heating process, such as spare sails, canvas, &c. The inside of the ship may be thoroughly washed with soap and water, well dried by means of fires and stoves, and the whole finished with white-washing*.

Such a plan for purification, conducted under a proper authority established for the purpose, we hesitate not to pronounce perfect in its kind; equal to the national object, and not endangering the cargoes of immense value imported into this country by the Levant trade.—The ship would there-

* Captain David Milne, whose gallant conduct on many occasions emblazons the naval annals of this war, lately informed me of an infectious fever having been brought on board *La Seine* frigate, in her passage to the West Indies, by old canvas. Some men were employed in cutting it up, for the purpose of converting it into something useful, and were, one after another, seized with typhous fever. On carefully inspecting the canvas, it was found soiled with excrementitious matter in different parts, and had a most loathsome smell. It is probable that this canvas had either surrounded sick apartments, in the sickly condition of some ship, or had perhaps been spread in the hold for prisoners to lie upon, among whom contagion had prevailed; and in this unpurified state was returned into store at the dock yard, from whence this frigate was supplied.—No caution, therefore, can be too great, so numerous are the vehicles and sources of contagion.

fore depart, having received her bill of health, duly certified and registered.

At a station thus appointed for quarantine, besides the buildings just mentioned, we consider wharfs, piers, an hospital and lazaretto, officers of health, &c. comprizing a complete establishment, to be also necessary. The whole premises ought to be surrounded by a wall and ditch, with a constant military guard on the out-side, and small vessels to watch on the sea-side.

The conduct to be observed, should any person arrive from abroad under the plague, demands some farther animadversion. To a number of people, communication with the patient might appear certain death. But the police of a Christian country cannot tolerate the idea of deserting a human being under such calamity, and is bound by its principles to obviate the horror of leaving him to his fate. A medical officer, therefore, with assistants and nurses, should form an appendage to this station; these ought to be men who would not shrink from their duty in the hour of trial. With such a task as this we naturally associate the god-like sympathy which is recorded of the good bishop of Marseilles; and the kind English clergyman Mompeffon, who never quitted their flock during a raging pestilence!

“ When nature sicken’d, and each gale was death.”

It is impossible to say, at what distance from its source a current of wind is capable of conveying infectious matter. This must depend both on the concentrated state of the effluvium or poison, and the diffusion of it in the atmosphere; but a few yards are perhaps sufficient, in an open situation, for perfect safety. In a spacious and well-aired apartment, where the body-linen and bedding are often shifted, infection can scarcely happen, even in a near ap-

proach to the patient. I suspect that the variolous contagion, from the great quantity that exhales at once from the surface, which in a manner saturates the atmosphere, is capable, for these reasons, of being conveyed to a much greater distance than any other; thus it imbues the clothes of attendants and visitors, who frequently transport it from house to house, and from town to town. A seaman belonging to the *Ramillies*, was lately carrying a bundle for an officer to Plymouth Dock; at the very threshold he saw in a remote corner of the house, a child covered with the small-pox sitting on its mother's knee: he instantly recollected that he never had the disease, dropped his bundle and ran off. This however did not secure him; he sickened about the eighth or tenth day after, and was sent on shore to the hospital. It is probable that a condensed current of air, loaded with variolous miasma, met him in the face as he approached the door*.

All houses of purification ought to be erected in spacious situations; both for the more perfect treatment of the sick, and the safety of the neighbourhood. It is not enough that a person is free from infection: it is requisite also that he himself should think so. No affliction in life can be more distressing than labouring under the apprehension of being infected; for there are a multitude of occurrences that are apt to keep these fears awake, if the person is living near hospitals or infirmaries; such as hearing of deaths, observing funerals pass by, meeting chairs or barrows conveying sick, &c. If people, therefore, cannot subdue their alarms, a change of scene will be the most effectual restorer of peace of mind; for some people are so irritable,

* Reported by Mr. J. Allen.

and tremblingly alive to this danger, that no reasoning can overcome their apprehensions.

But if alarms have been spread at the idea of the pestilence being again imported into Great Britain, it is some consolation that we are certainly better prepared to meet it, than was the case in former visitations. The state of medical knowledge every where is wonderfully improved; the treatment of the disease itself would feel the benefit of these improvements; and the subject of contagion has been rendered more familiar, by a vast accumulation of facts, by the frequent and recent occurrence of infectious fevers. The changes in modes of living among mankind in general, but especially among the inferior orders of people, have introduced habits less favourable to propagate and foster contagion. The streets in the metropolis, and other large towns, are more spacious, and kept cleaner. The houses of the poor are better furnished, more airy and neat; personal cleanliness is more attended to; cloathing has undergone a very material alteration; the use of cottons is more general, as well as linen. These articles, as they are less apt to harbour filth, by needing frequent washing, so they are less calculated to harbour infection, than the old-fashioned woollen stuffs of our ancestors. These salutary improvements are not confined to populous cities and towns; they extend to the cottage. Many changes in diet have also been effected more conducive to prevention. In the event of the pestilence breaking out, a well-regulated police, directed by judicious magistrates, and skilful physicians, would carefully look into all these circumstances, as by enforcing due attention towards them, the speedy suppression of the disease would depend.

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At so serious a crisis a particular deportment would be expected from physicians themselves. The medical character in this country has acquired reputation for private worth, universal learning, and active benevolence. During the rage of the pestilence, the minds of a people awakened to alarm bordering on distraction for the safety of themselves and relatives, would naturally turn their eyes to a profession whose province it is to ward off human affliction. And if a dignified fortitude and resolution were not exemplified by the faculty, society must sink to the last abyss of despair. The horror of pestilential contagion is magnified to a person of over-weaning sensibility, from being an invisible enemy, and acting even with certainty, at a distance from the source whence it sprung. Physicians who are conscious of that defect in their constitution, that would unfit them for the bold and resolute exertion of their profession, would do well to consider this, rather than expose themselves to an unequal conflict, that could not fail to plunge their friends into deeper distress. If the general, in the hour of battle, turns his back on the foe, terror and dismay must soon extend to the soldiery, thrown into disorder by the fault of their leader; and thus carnage and death, in more hideous forms, would be the consequence. A strength of nerves and spirits that fits us to face danger and difficulty in the common avocations of life, will be often found to shrink under this trial. We daily see medical gentlemen torturing themselves with the apprehension of being infected; and some of our acquaintance carry this timidity so far, as to avoid attendance on any patient labouring under continued fever. We have also seen many brave men of our acquaintance, that had trod the deck of honour,

honour, in the heat of an engagement, with the most heroic courage and composure of mind, exhibit such tokens of fear at being told there were infectious fevers in the ship, as almost exceed credibility. This species of mental excellence, is perhaps more the effect of education than the physical strength of constitution; and we should like to see it more inculcated into young members of the profession, than is usually done in the lectures of Professors.

The want of a medical inspector to decide on the condition of health in ships arrived from the Levant, is the cause of much mischief. A petty officer from the custom-house, with his boat's crew, hungry after perquisire, are the only persons intrusted with this solemn duty. Public service is by these means degraded, and the subject of securing health humiliated. Not even his Majesty's ships are exempted from this jurisdiction of the custom-house. I have seen some instances during the war, where the sick of a ship, as well as officers, suffered considerably from these ill-advised measures. If this business is at all worthy of the attention of Government, it ought to be systematically conducted in all its branches; not liable to evasion, but put beyond the reach of being defeated in its weighty and serious intentions*.

* It will be seen, in the Abstract of Occurrences, that I have endeavoured, by letters of representation, to correct the abuses here mentioned, from the number of ships, under circumstances of distress, after long passages, being most cruelly put under quarantine.

December 5th, 1801.

P. S. The very healthy condition of the fleet under the command of Admiral Lord Keith, has shown that British ships of war, disciplined as they now are, are capable of preserving themselves free from pestilential contagion, on those very shores that are said to give it birth. This could not have been the case in former times. But if it should happen that the plague may be imported, there is every reason for believing that it would be extinguished with the same facility that has been observed with the typhous contagion. The perfect health of the fleet on the coast of Egypt, is therefore great matter of triumph to the naval interests of the country *.

• A large store-house at Gibraltar is filled with the ingredients and utensils for nitrous fumigation; but the discerning officers and surgeons of the ships disdained to tamper with the lives and health of their people on such terms, and left the whole behind.

MEDICINA NAUTICA.

VENTILATION OF SHIPS*.

NO department of service is more frequently the subject of conversation among officers and surgeons than the ventilation of ships. But although all are agreed, that a pure atmosphere is

* As the chapter on ventilation is chiefly intended for the use of officers, I have subjoined an explanation of the chemical terms.

GAS; (German) air.

OXYGEN GAS; (Oxyus, a Greek word, signifying sharp or acid, and genomai, Gr. to beget,) because it is said to be the acidifying principle. It is also called pure, vital, empyreal, eminently respirable, and dephlogisticated air.

AZOTIC GAS; (A Gr. privative, and zoê, life, because it is destructive to life)—It is also called mephitic, or phlogisticated air.—These two kinds of air are only “mixed” in the atmosphere, when “combined,” they constitute *nitrous acid*, or *aqua fortis*.

CARBONIC ACID GAS; (Carbon, Fr. Carbo, Latin, coal or charcoal, because charcoal and oxygene, and heat, are its constituent parts)—It is also called fixed and fixable air, aerial acid, and choak damp.

HYDROGEN GAS; (Hydor, Gr. water, and genomai, to produce, it being a constituent part of water.)—It is also called inflammable air, fire-damp.

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the object to be obtained, the ways and means of effecting it are very different in different ships, so that as much quackery is displayed in this, as in any process of duty that we are acquainted with. One Captain is jealous of seeing the least moisture on his decks, while another orders them to be drenched with salt water every morning. Some contend for the purity of a hold, that is corrected by frequent, or constant fires, while others trust to the daily admission of clear water, for the perfect salubrity of the well, &c. There are none of these forms to be either imitated or condemned without qualification.

The method of extracting foul airs from the lowest apartments of ships, has employed mechanical philosophy for a length of time, to invent and adapt an apparatus and instrument for that purpose. More attention has therefore been directed to the construction of pumps for dislodging a vitiated portion, than has been bestowed on a machine that should fill up the vacuum by a purer column. For when a quantity of foul air is extracted by the pump from the hold, the portion that rushes in is not a part of the pure external atmosphere, but what comes from the decks, already much exhausted of its salubrious quality.

The history of Mr. Sutton's invention of air-pipes for ventilating ships, to be found in Dr. Meade's works, affords many striking instances of those rebuffs, which ingenious men too frequently experience from public boards, public offices, &c. It is curious to observe the jealousy of some officers in the dock-yards, on the introduction of Mr. Sutton's machines. These gentlemen having no powers of invention themselves, trembled at every thing that looked like improvement. Their information was so contracted, that they could not comprehend

comprehend his principles, and their minds were so narrowed by prejudice, that every impediment was opposed to his measures. Nothing but the patronage of the Royal Society, which seems to have been obtained by the liberality and activity of Dr. Meade, could have brought these air-pipes into use. They were ingenious, and constructed with just notions of the subject: by communicating with the fire-place, where the air was rarified by heat, a column from below rushed up to restore the equilibrium. Such an invention was at once simple and useful; but later improvements have made them be thrown aside.

A New Board has lately been tacked to the Naval Department, with a view to supply those abilities in the science of naval architecture, which were supposed to be unknown at the Navy Board and Dock-yards. The service has, however, yet to learn the mighty good that is to come from this new establishment. Among the number of new appointments, I perceive a chemist, with a salary of 400*l.* per annum. I was in hopes this philosopher was to be employed in giving lectures and experiments on chemistry to our officers, and there would have been no occasion for me to undertake the task of writing on ventilation of ships. Such lectures and experiments would be highly useful and entertaining. The naval officer might there learn much knowledge that concerns his profession; such as the properties of matter, the qualities of air, water, fire, &c. He might there learn with infinite advantage to service, the working of metals, the composition of gunpowder, that substance which he knows better than all the world beside, how to use in humbling the tyrants of the earth. Chemistry would teach him how to preserve water, provisions, and stores of every description, by infallible

fallible rules: but what is to be the duty of this chemist I can form no conjecture.

For the sake of method, I shall divide this subject into three heads, and treat of each separately, viz.

1st. A short history of the common atmosphere.

2dly. A short history of the foul airs in ships; and,

3dly. I shall endeavour to establish a rational practice by the induction of principles.

The atmosphere which surrounds our earth to an undefined height, is a heterogeneous fluid; that is to say, it consists of different kinds of air, which have distinct properties. The general analysis of atmospheric air, yields of azotic, or mephitic gas, seventy-two parts; of oxygene gas twenty-seven parts, and commonly about one of carbonic acid gas in the hundred. These component parts may occasionally vary in their proportion; for there are many processes in nature and art, that both purify and pollute the atmosphere. The oxygenous gas being the only portion of the atmosphere that is capable of supporting life; whatever diminishes that, or adds to the unrespirable part, renders it foul and unwholesome. The standard purity is reckoned 72 of azotic gas, and 28 of oxygene. Hence a large concourse of people confined in a close and unventilated place, and fires which consume a large quantity of air, cause the remainder to be unfit for supporting life or combustion. All animal and vegetable matters suffered to undergo putrefaction, pollute the air, by adding to that part that is unable to support respiration and flame, or by abstracting the pure portion in forming new combinations during their dissolution.

Water, like the atmosphere, is now found, by experiment, to be a compound of two kinds of air:

air: on analysis it gives out 85 parts of oxygene, and 15 parts of hydrogene, which is the base of inflammable air in the hundred. So clear and decisive is this experiment, that deprives water of its rank as an element, that these proportions of oxygene and hydrogene gases, when put into a proper apparatus, and the electric shock passed through them, are instantly converted into water. It is necessary to remember this composition and decomposition of water, as it explains most of the processes which pollute the air of a ship's hold and well.

Growing vegetables are found, by experiment, to purify the air; they add oxygene to it, by decomposing the water, and the hydrogene goes to the nourishment of the plant. But this process of purification by vegetation, only goes on while it is light: the heat of the sun has so powerful an effect in this business, that it has been lately proved to be greater in summer than winter. Some experiments have been made lately, that prove the proportion of oxygene to be greater in the island of Martinique than in Great Britain, and this probably takes place in all the tropical latitudes.

These substances, oxygene, azote, hydrogene, and carbone, when combined with the matter of heat, caloric with which they have a strong disposition to unite, are sustained in their æriform, or gaseous state: they are therefore denominated the bases of oxygenous, azotic, hydrogenous, and carbonic acid gas.

Oxygene air was first discovered by Dr. Priestley; and on account of chemical theories then prevailing, it was called *antipblogisticated air*. It occupies so important a station in the various operations of nature, that the discovery may be justly extolled as the most brilliant in the annals of chemistry.

To the same philosopher we are also indebted for the analysis of our atmosphere.

This short history of the atmosphere will be sufficient to prepare us for a knowledge of those *foul airs* that are apt to be generated in ships; for from whatever cause the standard purity is destroyed, the air is to be deemed foul or impure.

Every ship inhabited, may be justly said to have an atmosphere of its own surrounding it, in a greater or lesser degree; and it requires a more considerable force of wind to displace it than has been usually imagined: it probably adheres to the lee-side, and moves with it over the surface of the water. It is a common remark, that voracious fishes often follow ships at sea for many leagues together. In Guineamen, this is said to be from a kind of instinct, that teaches them to watch for dead bodies; but a much better reason is, to attribute it to the smell, the effluvium conveyed by the air in and about the vessel; for it is well known, that the olfactory organs of fish are very sensible. Various matters impregnate the air with smell, such as provisions of different kinds, but the chief source must be the living human body.

There is no situation where so large a number of human beings are confined in so small a space as in a man of war. In two and three decked ships this especially happens; and on various occasions we observe, that it very materially affects health. In the production of scurvy this remark particularly applies. When a fleet of ships, under equal circumstances of health, goes to sea, composed of different rates, and cruizes for ten or twelve weeks in the Channel, the scurvy usually begins to appear, but it may be sooner or latter, according to causes that are manifest. In ships of three decks, a larger number of cases will be found in proportion

nion to the complement, than in one of seventy-four guns; more will be observed in the two-decker than in the frigate, and in the sloop of war or cutter, the proportion will be found the smallest of the whole. We suppose the diet of the whole to have been alike; and if the disease, as it first appears, is not distinguished by these gradations, we know that it has been warded off by means that can be accounted for, such as superior discipline, giving the people less fatigue in duty, &c.

The generation and progress of contagion among ships, is nearly in the same proportion; and is better explained by the condition of atmosphere than any other cause, such as the situation of the fire-place, which has been said to purify air, and destroy infection, by the smoke issuing between decks. At night the ports are lowered down and barred in; the chief places for the crew to draw air from are the small scuttles, hatchways, and gratings, or wind-sails, which are seldom attended to at night. The air that is deprived of its oxygen, by respiration of the people, if heavier than the common atmosphere, will descend to the lower sleeping place; and if lighter it will ascend. Whenever there is a greater number of decks, the air in proportion will become more impure, as it comes less in contact with the external air and free ventilation. A large ship having less motion than a small one, also loses the advantages which a quick agitation gives to a body of air confined below, and prevents the mixture of the superior pure part with the inferior stratum that is contaminated. Thus, the human body is predisposed to scurvy, as impure air accelerates the effect of the sea-diet: thus also the contagion of typhus, more certainly acts as the body is left in a state of diminished excitement, by the stimulus of the vital air being

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withdrawn. Hence the great necessity of a constant supply of pure atmosphere.

It thus appears, that the foul air which lodges in ships' decks, where people live and sleep, is chiefly that portion of common air which is the *residuum* of respiration; we say *chiefly*, because we shall afterwards find, that it is liable to be mixed with another kind, that sometimes rises from the hold or well.

It may be here asked, why is so small a portion of the atmospheric air fitted for the purposes of life? and why has nature mixed it with so large a quantity of what is hurtful to animals? The positive uses of azotic gas, have not yet been distinctly marked by philosophers; but it possesses the negative property of diluting the oxygenous gas; which by itself is too stimulant to be respired by human lungs, as found by those who have attempted to breathe it.

A substance occupying the bottom of a ship's well or hold, has been long known in our navy, from its frequently suffocating the carpenters employed about sweetening the ship. No designation before our own was given to this substance, nor was its production accounted for. It is only by pneumatic chemistry that it is capable of explanation. We have ventured to say, that it is *carbonic acid gas*, otherwise called *fixed air*, *choak damp*, &c. That this is the lethal vapour of the well, may be easily proved by experiment. It can be brought up in a bucket, and may be poured from one vessel to another; its properties are, to precipitate lime from lime-water; when mixed with water, it imparts to it an acidulous taste; it turns the blue tincture of vegetables red, like all acids. The specific gravity of carbonic acid gas, in proportion to that of common air, is as 150 to 100;

it therefore falls to the bottom, and occupies the lowest stratum whenever it is found.

Modern chemists have satisfactorily analyzed this elastic fluid: it can be compounded and decomposed with ease. Its component parts are eighteen of oxygene to seven of carbonaceous matter, or coal; hence it receives its name, and the large proportion of oxygene gives it the quality of an acid. It is produced in great quantity during the combustion of charcoal, and by fermentation; limestone gives it out on being burnt, and converted into quick-lime: it renders alkalis mild; it is also produced in the act of respiration, which may be proved by blowing into a vial of lime-water, the lime falls to the bottom: this is the vapour which kills dogs and birds at the *Grotto del Cane*, near Naples.

Having now explained the chemical nature of water, and the vapour that suffocates people in the well, if allowed to accumulate, we are now prepared to account for its generation in the hold of a ship.

The production of carbonic acid gas, is to be explained in the following manner: When water is allowed to remain in contact with the timber of the ship, a mutual attraction takes place between their constituent principles. The water is decomposed, and supplies oxygene one of its parts to the charcoal, or carbonaceous matter of the wood; which, as we said before, form carbonic acid gas. While this combination is going on between the oxygene and coal, the other component part of water, which is hydrogen, is disengaged, and as it is very much lighter than common air, it rises upwards, ascends among the decks, by attracting caloric, it becomes a gas, and gives to the nose the bad smell which we perceive when the well is

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foul.

foul. This is the bilge vapour; its specific gravity is about 15 to 1 of common air, being the lightest of all elastic fluids, and for that reason used to fill balloons. It is called *fire-damp* by miners, because it is easily set on fire, and often destroys them. Seamen employed in the hold are familiar with it, and amuse themselves by taking out the bung of a cask of stinking water, and set the vapour on fire by a candle. It mixes in certain proportion with water, and gives it the disagreeable taste and smell. It changes the colour of white paint to a black, which is often observed in ships. White lead, of which the paint is made, is lead oxydated; that is, lead combined with oxygene. Now the hydrogenous gas, or bilge vapour, which rises out of the well or hold, attracts the oxygene from the white paint, which immediately becomes a metal, and loses its colour. This quality of altering the paint, and the foetid smell diffused throughout the decks, will always indicate that the hold, or well, are in an unwholesome state; because, in proportion to the quantity of the hydrogenous gas which flies upwards, a large portion of the deadly vapour, the carbonic acid gas, or fixed air, will be found in the bottom of the ship. Carpenters must be very cautious how they venture into the well at this time. It is proper to let down a candle in a lantern; if the light goes out, it is death to descend.

When any substance liable to fermentation, comes in contact with moisture in a ship's hold, the generation of impure air is the inevitable consequence. All vegetable substances mixed with ballast may have this effect. Great care should therefore be taken, that nothing but clean pebbles be admitted there. Green wood, whether for fuel, or for stowing casks, is of this description.

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When small beer puncheons, sugar, or melasses, happen to be stove, and leak, they much increase the production of impure air, by favouring the decomposition of moisture.

Most people have perceived the very offensive smell of bilge water after a cask of spirits has been leaked out in the hold. This sometimes continues long, and is difficult to be got the better off; but the best method of cleaning, is to throw in abundance of pure water to carry off the spirit. All kinds of spirits yield a large proportion of hydrogen, or the base of inflammable gas, which gives out the offensive vapour. This is the substance that affords the horrid fœtor to the breath of the dram or grog-drinkers, who are known to have sometimes undergone combustion, or burning, during life.

The provisions which afford the most disagreeable exhalations are cheese and butter when they grow rancid. Cheese is very much disposed to putrefaction, which is greatly increased by the heat of the bread-room, where it is usually kept. Plain as this observation is, yet so little has service improved from experience, that there is scarcely a ship that does not condemn a quantity of cheese three or four times a year. All this might be prevented by keeping it perfectly dry, and well aired, while in the storehouse on shore, and by airing it often in dry weather upon deck.

Nothing has been so offensive on the decks of our ships as pig-styes. I am glad to find that Lord St. Vincent has ordered them to be moved into the waist, to make room for the sick-berth. Our opinion has been long at war with these nuisances: officers ought cheerfully to give up a few messes of fresh pork to their stomachs, to let their lungs have the full benefit of pure air in their sleeping and waking hours.

There is another very filthy practice in ships when in port, of hanging their fresh beef under the half-deck, or under the booms in the waist. It is in these places exposed to the breath of the whole ship's company, and is often brushed by them as they pass. The sight is extremely disgusting. I think some plan might be fallen upon to hoist it up under the main yard, and to cover it above with some sort of awning or safe.

We are now prepared, by the explanations given above, to apply the principles of chemistry to the best method of ventilating the decks of a ship.

It has been seen what pernicious effects are to be expected from water being allowed to stagnate in contact with timber in the hold or well. But the same takes place, more or less, in the upper decks, whether wetted on purpose, or by water getting over the ship's gunwale, or in at the ports. We have often seen this baleful practice of washing decks persisted in, till the very planks became green with vegetating substance, and appeared like the inside of a tank, or the bed of a pond. Nay, a surgeon of a seventy-four gun ship, lately complained to me, that in the middle of winter, the main and quarter decks were washed every *evening*, and of course, from the low temperature of the weather, could never be dry. The effects of this custom, that favoured equally of ignorance and cruelty, was quickly observed among the crew. A long sick list of catarrhs, rheumatisms, pleurisies, and low fevers, was the consequence, which only disappeared after a considerable number of deaths, on the approach of summer weather.

It ought to be understood by our officers, that timber can only decay by the application of moisture. They know well, that a ship built of green wood; that is, what they commonly denominate

unseasoned

unseasoned timber, will not last so long as one made of well prepared materials. This difference entirely consists in the unseasoned wood being cut down while the tree is full of sap, in order to separate the bark for the purpose of tanning more easily from the wood. The speedy dissolution, therefore, is owing to the quantity of humidity contained in the sap vessels, which chemically acts upon the timber, and is reacted upon again. During this combination of principles, different airs, gases, or aërial fluids are generated and disengaged, till the log or plank is wholly converted by something like a slow combustion into rotten wood, which very much resembles carbonaceous matter.

We thus see that water only is as it were the *solvent* of wood ; if preserved from moisture, it might be said to keep for ever. A deck, like other pieces of deal, will appear perfectly dry to a common observer, but if put into an alembic, over a fire, it will soon discover a large proportion of water that issues from its interstices, and is converted into vapour by the heat. But besides the production of impure air, and rotting the timber by drenching it with water, chemistry unfolds another secret, by which it is hurtful to the living body. There is no seaman so ignorant, but he knows that fogs are bad for health ; that they produce colds, rheumatisms, &c. Now a sailor sitting or standing on a wet deck, is exposed to a constant fog, by the water exhaling from the plank ; he is involved in a perpetual mist till it becomes dry. In a situation of this kind, some people will tell you, that you are apt to catch cold in the feet. But not the feet only, but the whole body suffers, and is apt to have its perspiration checked ; for the space which it occupies is some degrees colder than other parts of the air, by the quantity of heat that it takes to
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convert the water into vapour. It is literally exposure to a cold bath for a length of time; and its effects are exhibited accordingly by the complaints which it causes. But in the night-watches the baneful effects of wet decks are chiefly observed. If a seaman, from being intoxicated, over-fatigued, or otherwise, lays himself down on the decks in this moist state and sleeps, disease of some kind, bowel complaints, catarrh, rheumatisms, &c. immediately follow. An attentive officer will therefore be cautious how he allows his watch to loiter about the decks, whether after washing in wet weather, or at any time when it is unusually cold. During sleep the body is extremely susceptible of cold. Amusing them therefore by every means, in a night-watch to keep them cheerful and active, is highly conducive to health.

If none of these reasons can dissuade from drenching a ship with salt water, there is still another to be urged. Salt water has in solution a quantity of *muria*, or common salt. Whenever the water evaporates it leaves a portion of this salt; and coming in contact with a nail or bolt, the *muriatric acid* in its composition, which is one of the strongest solvents for iron, immediately acts on that metal. Every day that the decks are washed, adds a fresh quantity of salt, which continues to corrode the iron, till it converts every nail and bolt into rust. The bolt is thus loosened in its hold of the timber; the deck becomes *nail-sick*, finds room to play, till by some heavy lurch or motion of the ship it snaps, and thus endangers the vessel falling to pieces; as has often happened when they are said to founder at sea. Such is the speedy decay of iron, as well as timber, by the action of salt water; and to make both durable it

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is necessary that they should be secured against every species of moisture.

Salt water will not keep so long sweet in a cask as pure fresh water ; because the salt which is in it facilitates the separation of its principles, and produces a quicker decomposition. It is a common practice to plunge a joint of meat into salt water and immediately to draw it out again, with a view to make it keep. This might seem to countenance a contrary opinion ; but it is to be remembered, that hanging the meat up as soon as taken out of the water, allows the moisture to evaporate while the salt remains, and thus serves as a gentle corning.

The whole of this doctrine tends to prove, that water can never be thrown over ships' decks without doing mischief. By corroding the iron work it weakens the ship ; by rotting the timber it generates unwholesome airs during that process, however slow ; and lastly, these airs predispose the body to fatal diseases, and always assist in bringing on premature decay.

We need scarcely hint that the best substitute for washing decks is *dry-rubbing with sand*. This practice fortunately gains ground ; it affords a wholesome exercise for the people ; and it has been well exemplified in the best regulated ships, that their decks look better than those drenched so frequently with salt water. This salutary reformation has probably saved more lives than any other alteration whatever. *Whitewashing*, at all times so delicate and cleanly, makes a part of this plan, and excites ideas of personal cleanliness among the people. But it may justly be reckoned a purifier of the atmosphere ; quick-lime strongly attracts the *fixed air* of a well or hold ; and also *nitrous air*, which some physicians assert is contagion itself.

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But if officers wish to preserve their decks in this state, they must permit no *fumigations* below; all of which convert the lime into *neutral salts*, that in damp weather attract moisture, and keep the timbers wet. Captain Rickets Jarvis orders quick-lime to be mixed with the dry sand for rubbing decks; which, besides the delicate cleanly appearance it gives to the timber, may act salutarily in the orlop by attracting *carbonic acid gas*, or fixed air, which abounds there.

This short history of the atmosphere, with the manner in which foul air is generated in ships, points out the importance of a constant supply of pure air. When the whole ship's company sleep below at once, which is always the case in harbour, the respirable portion must be very quickly consumed. The scuttles, and sometimes a few ports, are opened for ventilation. But these have their inconveniences. The man who lies nearest the scuttle finds the current disagreeable, and often shuts it. In harbours locked by high lands, it is a good plan to keep the ship's broad-side to the wind, by a spring on the cable. Much however might be done by having air-flews, so constructed as to communicate with the upper-part of the ship, raised some feet above the gunwale, with scuttles fitted to open, as the wind may be on the beam, or otherwise. The lower end of these ought to come within two feet of the lower-deck; by which means the current of air would be diffused abroad, without blowing partially on any particular sleeping place. A very equal circulation would in this manner be maintained, when there was a necessity of laying tarpaulins over the hatches to keep out rain, or when wind-sails could not be put down to advantage in bad weather. The Medusa hospital ship was fitted at Plymouth with air-shafts of this description,

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description, and, when duly attended, kept the hospital sufficiently ventilated. We can find no objection, as far as we have conversed with officers, to their general introduction throughout the navy: they can be so constructed as to be clear of the guns and ropes; and when we consider the great advantages of pure air to life and health, we ardently wish to see the trial.

A ventilator constructed nearly on these principles may be seen on board the *Barfleur*, the contrivance of Rear Admiral Collingwood; and the Admiral, with great justice, attributes a large share of the improved health of his ship's company, to this flow for conducting from the lower parts of the deck, the air vitiated by respiration.

Whenever weather will permit, wind-sails ought to be put down and carefully trimmed; sufficiently large to throw in a strong current, that may by its force perflate every corner: the intermediate space between the lower ends of each wind-sail ought therefore to be kept perfectly clear, as they will reciprocally draw from each other, and thus render the stream every where pure.

In the well-regulated ship, where one of the main-top-mast stun-sails, from its commodious size, is usually converted into a wind-sail, the lower end is generally put so low as the hatch of the main hold; and when the fore-hatch is kept open, that part of the hold is of course well refreshed. But the whole bottom of the ship cannot be purified in this manner, the spirit-room being surrounded by bulk-heads that are water-tight, for the security against fire. The bread-room ought to have a wind-sail to itself; and the forepart, which is commonly a close bulk-head, ought either to be
grated,

grated, or constructed with folding-doors, to be laid open as often as may be found necessary. I consider the bread-room of a ship, from its present pent-up condition, the number of lights so frequently burning in it, and the noxious effluvia issuing from cheese, &c. as a species of volcano that is constantly throwing out pestiferous fumes to shorten and weaken life.

A wind-sail cannot be readily trimmed when it blows hard; the head of the sail is forced from its perpendicular, and forms an angle with the deck, by which means the sail is compressed, and no aperture is left for the air to get down. This may be remedied in some degree by lowering the wind-sail; but even then it fits imperfectly.

We think a very commodious apparatus for ventilation might be constructed on the principle of the common bellows. This machine ought to be placed on the quarter-deck, or booms, over the waist, that no air might be thrown down but what is perfectly pure. Long leathern tubes being fitted to the nasal of the bellows, would by this contrivance convey a current of wind into every corner below, as you choosed to direct the mouth of the tube.

The instruments now in use for extracting foul airs, are as much adapted to the purpose as the intention required; but the air which rushes in, to restore the place of that just extracted, gives no additional purity, unless a fresh column is flowing in from the upper parts of the ship. This shows the great necessity of flews and wind-sails, that no portion may be ever permitted to stagnate below, but a constant circulation throughout the whole preserved.

The new arrangements of the store-rooms in the fore-cockpit, which admit a free passage along the

the sides of the ship, as also in the cable-teirs and store-rooms abaft, are admirably adapted to preserve a pure ventilation, besides the cleanliness and order of the whole. The best models of this kind with which we are acquainted, are to be found in the *Temeraire*, Rear Admiral Whitshed, and in the *Mars*, Rear Admiral Thornborough, in the *Impetueux*, Captain Sir Edward Pelew, &c.

Without the store-rooms and wings being arranged in this form, it is difficult to ventilate a ship below. In the summer season, and in warm climates, the orlop-deck, in some corners, comes very near to a *vacuum*. This I experienced in my cabin on board the *Vengeance*, in the West Indies in 1793. Immediately on putting my head into it, the vapour burst from my face like a heavy dew; and on entering it bodily it seemed to gush from every pore. My sleep was often disturbed, chiefly from thirst. The quantity of water that I drank in the course of the night was uncommonly large; frequently six quarts; which were supplied to me by the centinel at the after-magazine door. The worst effect was a violent inflammation of my eyes in the morning, from the perspirable matter, which subsided in the course of the day, but added to my natural shortness of sight. Yet at this time I could sit at ease in the Purser's cabin on the opposite side of the cockpit, which was better ventilated, by the ladder conducting a current of air from the hatchway. The quantity of liquid which I consumed in the course of twenty-four hours was about nine or ten quarts; viz. tea twice a-day; half a bottle of wine; half a pint of porter, the rest water. Urine about four ounces. Had I continued the twenty-four hours in my cabin, the liquids must have exceeded sixteen quarts.

With

With respect to preventing the generation of foul air, the fixed air, or *carbonic acid gas* of modern chemists, in the hold and well, there are various means practised in different ships. A perfect knowledge of its chemical qualities, explained above, very much facilitates the nature of this duty. The hold of a ship can seldom be kept so dry, as to generate no fixed air, if the bottom is completely tight, the leakage of casks, or water falling from the deck, will generally afford moisture for this purpose. Hence many officers direct fires to be kept in the well frequently, and the well itself to be inspected often, and swabbed dry. This will often answer the intention, but sometimes there is so large a production of the foul air, that other means must be put in execution. It is found that carbonic acid gas mixes very readily with water; and, in this manner, clean water being let into the well soon takes up the whole; while, at the same time, it washes away all the stignating filth and moisture which are undergoing decomposition, and which otherwise would prove an endless source of the noxious vapour. If the cock is stopped, or the pipes admit no water, by throwing it from buckets, or sprinkling it gradually into the well, the same purpose is answered, Quicklime being mixed with this water, would do it still sooner, because it quickly attracts the air.

In sickly conditions of ships, it is a common practice to wash the decks and timbers with vinegar, as well as the sick-berth. The practice is certainly a good one; but it is a better method to sprinkle it very gently on the deck, than to evaporate it by means of fire, or hot iron. The oxygen air, which gives acidity to vinegar, is disengaged in a gradual manner, during a slow evaporation, and thus adds to the pure and respirable portion.

portion. But vinegar must never come in contact with white paint, or white wash. The first it converts into sugar of lead, and the latter into acetate of lime. It therefore changes both, and thus renders the timber more liable to attract moisture, and become damp.

When *fires* are let into the well for the purpose, as it is said, of expelling the foul air by rarefaction, care should be taken not to let them at first to the bottom, lest they should be immediately extinguished, which is always a proof that the stratum of air would quickly kill a man. We are, however, of opinion, that the best method is to let pure water in as often as necessary: this must be regulated by the cleanliness of the hold otherwise, and what may encourage the decomposition of the moisture. In warm climates, and in the summer season, attention to this duty is more required; for water always stagnates sooner in hot weather than cold, so much does heat assist the decomposition, and consequently the speedier production of the foul air.

The employment of *fires* for purifying the decks and holds of ships, is a very ancient practice; but cannot be defended by a proper knowledge of the subject, without qualification. A more correct philosophy teaches us, that fire consumes pure air, and renders the remainder more unfit for respiration, in proportion to the quantity necessary to support combustion; for respiration and combustion can only take place where there is a due supply of the oxygenous portion of the atmosphere. A fire is, therefore, to be considered as destroying as much air as a certain number of living beings would do in the same time. A much better way of accounting for the good effects of fires, is their power of drying up moisture. We have contended, that moisture thrown upon the decks, or

VOL. III. U in

in any other way coming in contact with the timber, is one of the chief causes of impure air being generated. Fires, as tending to dry it up quickly, must therefore be beneficial, but we can in no other way account for their purifying the air, unless by rarefaction of heat, a new column flows in, for the fire gives out nothing salutary. But there is another way in which fires are useful, whether in damp and cold weather, or when infection prevails in a ship, that is, by supporting the heat of the human body, which is highly necessary in the winter season, when low contagious fevers are most prevalent. In such situations, the large stoves and hanging fires become requisite, by supporting the excitement of the body, and in this manner we consider them as preventives of infection; for warmth in all its forms, provided you breathe a pure air, is a chief support of animal life.

Mr. Bell of the *Bellona*, in his report for May 1800, makes the following judicious remark on this subject: "The general good state of health
" of the ship's company, I think we principally
" owe to the unremitting attention paid by the
" executive officers to *dryness and ventilation*.
" Much larger fires than I have ever seen in any
" other ship, are kept constantly burning in damp
" or rainy weather, and after washing the lower
" decks. The *grates* are of a particular construc-
" tion, (similar to those used by coopers for burn-
" ing the inside of casks,) they have the advantage
" of holding a large quantity of fire, and throw the
" heat to a very considerable distance in every di-
" rection." It will be readily perceived, that
grates of this form are much beyond the *stoves*
usually employed, where the greater part of the
heat passes up the vent. They ought to be lighted
above

above deck, and kept there a little while, till the fire burns clear, and the smoke in no danger of blackening the white-wash, which should never be soiled.

Next to fires for ventilation, is the employment of fumigation. This process has earnestly engaged the attention of officers in the British navy, from the earliest records of service to the present times. And now that chemistry has proved its falsehood, the practice has been reluctantly abandoned, so strenuously is the human mind attached to ancient prejudices. A new form of fumigation has been introduced among us in the course of the present war, more highly recommended indeed than some preceding fumigations, but favouring as much of empirical principles. This is the nitrous fumigation of Dr. J. C. Smyth, recommended in the instructions given by the Board of Sick and Wounded to navy surgeons.

I should have thought this quackery unworthy of notice in this part, as it is fully discussed in its proper place, were it not to guard officers against some erroneous notions that are apt to impose on common observers. It has been remarked, that during the employment of this vapour, offensive smells disappear, which has artfully been considered as purifying the atmosphere. Thus, a disagreeable flavour is corrected to the organs of smell, while a poisonous vapour that has no smell, may still remain in the surrounding air. The following letter from a valuable and intelligent officer, illustrates my opinion better than any comment I can make.

“ Sir,

Atalante, Spithead,
Aug. 5, 1799.

“ The second volume of your *Medicina Nau-*
“ *tica* having fallen into my hands, I observe
“ you therein express a wish of general communi-
“ cation on its various subjects.—As a total want
“ of chemical knowledge may have led me astray,
“ in considering the circumstance I am going to
“ relate to you, being worthy your notice—I shall
“ briefly add it, as I am sure you will accept the
“ intention as it is meant,—be it right or wrong.

“ The *Atalante*, during the winter’s cruize, made
“ a spell at the pump necessary every four hours;
“ and this for a period of three months.—Of course,
“ the timbers, ceiling, &c, of all that part the
“ water reached; were fully saturated, but from a
“ constant supply did not become offensive in
“ smell.—After refitting at Plymouth, the leak
“ did not totally subside, and she yet made suffi-
“ cient to keep her sweet.—The latter end of June,
“ I arrived at Spithead, and continued awaiting or-
“ ders till the 18th July, being the whole time fine
“ calm weather. The leak during this period
“ ceased, and in five or six days the bilge-water
“ was intolerably offensive.—The only purifier
“ in our possession was fire. The *Atalante* having
“ no cistern, or cock to let in water, an hanging
“ stove was placed, during seven hours, in the
“ well, for eight successive days; during which
“ the smell rather increased, and it had proceeded
“ to turn the paint in my cabin, and the gun-
“ room, and was literally dreadfully bad. My
“ uneasiness at the probable consequences to the
“ crew, led me at last to try the nitrous gas, al-
“ though I had heard it much spoken against. On
“ finding its effects throughout the ’tween decks
“ and

“ and cabin, I determined to put it in the well;
 “ and in order to give it fair trial, directed the
 “ fire to be discontinued; which, after eight days’
 “ use, (and I visited it myself,) the air would not
 “ admit being put down to the bottom *at once*,
 “ but by degrees, in the course of an hour.—
 “ Using the nitrous gas twice a-day in the well, for
 “ four days, without any fire, completely took
 “ away all the smell, *and the effect on the paint*
 “ *ceased*.—We remained at Spithead three days
 “ after; used no fire there, or nitrous gas, and
 “ had *scarce any* return. On going to sea we
 “ sprang a fresh leak, and of course I have had
 “ no opportunity of trying it again, being quite
 “ sweet, the water coming up neat as imported
 “ from alongside.

“ It appears from this statement, that the nitrous
 “ gas had not only dissipated the offensive smell,
 “ but positively purified the air, by the effect on
 “ the paint ceasing. As I learn, by the language
 “ of Professor Mitchell, the turning of the paint
 “ to proceed not from ‘ an effluvium of a foetid
 “ nature, without a particle of infection.’ Vide
 “ Appendix, page 297; but from ‘ pestilential
 “ steam;’—‘ a thickened vapour.’ Page 291.

“ I have thus fully stated it, that you may be per-
 “ fect master of the case, to enable you to point out
 “ some cause of dispersion that has escaped me, and
 “ which I shall feel obliged by your communicat-
 “ ing. I take the liberty to add, that numbers
 “ like myself, perfectly ignorant of chemistry, and
 “ its language, would reap an additional benefit from
 “ the perusal of your works, if a general explanation
 “ of terms was added. I am, Sir,

“ Your very humble servant,
 A. J. N. GRIFFITHS.”

DR. TROTTER.

We thus observe, that the Captain thought his atmosphere in the ship fully pure, because the smell of the *bilge water* disappeared. But it is demonstrated above, that the most dangerous effect from foul air in the well, is from the *fixed air*, or *carbonic acid gas*, and not from the *inflammable air*, or *hydrogenous gas*, which rises upwards, and blackens the paint, while it produces a bad smell. The vapour of the nitrous acid undergoes chemical changes, by coming in contact with this offensive vapour of bilge-water, but effects no change with the carbonic acid gas, which was probably accumulated in great quantity in some part of this vessel's hold, and would only be dislodged by the pure water, which was taken in at sea by means of leaks. To a person unacquainted with chemical attractions, such sudden changes as these appear wonderful, as the sense of smell only perceives the difference. How often do we observe in a warm room, crowded by a number of people, when any delicate lady faints away in consequence, that every person round her is lavishing scents, such as lavender spirit about her, because they think them reviving: but a single breath of pure air from a window, answers the purpose better, because the fainting was owing to the deficiency of that in the inspired air of the room. It was no surprising thing for me to read the account from this officer, when we have seen and read so much from physicians and surgeons who speak of bad smells being corrected, and the air purified by fumigations, when it ought to have been done by ablution. I think there is nothing so unpardonable as to allow filth to accumulate, till it excites offensive effluvia, and then to be corrected by chemical agents. The practice which I pointed out to this officer was, to pour water into his well from above, as he had no
pipes

pipes to let it in through the bottom, and then to pump it out. This was destroying the source of the noxious exhalation both above and below; whereas his nitrous vapour must be kept in constant employment, as the supply of the inflammable air from the bilge-water was going constantly on, and might, under the circumstances mentioned, be considered as a permanent laboratory while the ship lay at anchor, and did not leak.

Yet it is singular, that Captain Griffiths did not attempt to dislodge the bilge-vapour by windsails, which would have done it effectually. But it is to be explained, from his attention being entirely engrossed by fumigation; an effect common to all quack medicines, even in the hands of discerning people, such as Lords, Bishops, Judges, &c. who thus lend their names to the *charlatan* advertisements of the day.

Let it therefore be carefully attended to, that while officers perceive bilge-water offensive, there is besides the vapour which diffuses the disagreeable smell throughout the decks, another vapour that, from its specific gravity, always occupies the lowest stratum, which has no smell, but is fatal instantly whenever a human being, or any other animal opens its mouth to take it in; they are produced at one and the same time, and the one can never be present without the other.

Ships built by contract for Government service, are commonly of green timber. These ships are always unhealthy in proportion. A constant steam of impure vapour is exhaled from the timber above and below, which undergoing decomposition, ascends in the form of hydrogenous gas, vulgarly called bilge-vapour, while another portion of the moisture either seizes the iron-work, and converts it into rust, or attaches itself to the carbonaceous

matter of the hold, and forms carbonic acid gas, or fixed air, which is the vapour that floats on the top of the water in the well, being the lowest part of the ship, as it sinks to the bottom from its gravity.

In addition to this article, we are of opinion, that the cables, and all kinds of stores, ought to be carried above and exposed in the open air as often as possible. Sails are very liable to decay in a warm room, if water comes among them, which might always be saved by punctual attention in this duty.

Some part of the provisions, such as cheese and bread, often require airing on deck for their preservation: it is when they begin to decay that they lessen the purity of the atmosphere.

The following letter was addressed to Mr. Nepean, with a view of improving the state of the hulks, where the people are lodged while their own ships are in dock, or undergoing a repair and refit. It is more nearly allied to this part of our subject than any other, I have therefore given it a place.

“ Sir,

Spithead, Feb. 28, 1798.

“ Having frequently remarked that the Ships’
 “ companies while lodged in hulks, during the
 “ docking of their own ships, had been sufferers
 “ in point of health, from the imperfect accommo-
 “ dations, I have been induced to examine them,
 “ for the purpose of trying whether some im-
 “ provement

“provement might not be suggested to remedy
“this evil.

“The irregularities which seamen are apt to
“commit while in harbour, are no doubt a very
“principal cause of disease; but in the winter-
“season we know, that slight fevers, rheumatisms
“complaints in the breast, sore throats, &c. are
“often to be traced to a wet, damp, and unven-
“tilated hulk: and as these vessels have no com-
“modious sick-berth, there is too often a neces-
“sity for sending them to the hospital, a practice
“always to be avoided in a well manned ship.
“Some of these hulks are also too small for the
“crew of a three decker: the Queen Charlotte’s
“people are at this time confined in too nar-
“row a space. Breathing for a length of time
“an impure atmosphere predisposes the body
“to a condition that renders sea-diet more easily
“productive of scurvy, and defeats other means
“of prevention.

“1st. More strict regulations are wanting to
“enforce cleaning the decks of the hulks; they
“ought to be white-washed five or six times a-
“year.

“2dly. Every deck ought to be fitted with
“shafts for conducting upwards the irrespirable
“air.

“3dly. Glass, or bunting sashes, ought to be
“fitted for each port, part of which might open
“by a hinge, to shut when it rains, but to open
“in fine weather.

“4thly. An awning of pitched canvas over the
“forecastle, with side curtains, that the hammocks
“may be brought on deck every day.

“5thly. A fixed sick-berth in the galley, to
“take in one round-house, as in commissioned
“ships.

“6thly.

“ 6thly. The orlop deck to have large scuttles
“ fore and aft, as in prison ships, &c. and to be
“ white-washed with the others.

“ Ships’ companies are often two or three
“ months in a hulk, during which time much
“ of the etiquette of discipline is laid aside, be-
“ cause the present confined and nasty state of
“ the hulk renders personal cleanliness imprac-
“ ticable, and with this health, order, and mora-
“ lity suffer.

“ I have therefore to request you will be
“ pleased to communicate these remarks to their
“ Lordships.

“ T. T.”

To EVAN NEPEAN, Esq.

MEDICINA NAUTICA.

VARIOLA AND VACCIOLA.

IN the former Volumes of this work, from the frequent occurrence of small-pox in his Majesty's ships, that disease was admitted among the number of those which required our animadversion. Our advice, though not followed up with that zeal and attention which the magnitude of the object pointed out, has however done much good; and excited a spirit of observation towards the early suppression of the infection, that had been hitherto but little regarded.

Within the last three years of the war, and particularly in 1800, the instances of variolous infection being brought on board of the ships of the fleet were more numerous than on any former occasion. The disease at that time, in the natural way, was very general in the populous towns of Plymouth, Plymouth-Dock, and Stonehouse. The seamen, while on shore at liberty, were more than usually exposed, from the number of public houses that had lately been opened in the vicinity, and multiplied the sources of this as well as all other kinds of
infect-

infection. I have only marked a few of those instances, as they appeared in the general history of health, where something particular had happened. In a multitude of them the infection had been carried on board by children in their mother's arms. Surely it ought to be strongly enforced in our code of naval discipline, to prevent the introduction of small-pox. The Master at Arms usually attends at the gang-way to search the women for spirituous liquors; and at the same time he might with equal ease inspect the children, and where any suspicious eruptions, such as the small-pox, measles, or itch, appear, the surgeon of the ship ought to be called to decide on the propriety of admitting the woman or child. Where the disease is in danger of extending, inoculation cannot be too early practised.

A fact has been lately communicated to me, of the variolous infection being carried from England to Jamaica, and back again, in a chest of clothes; which had been sent from a house in Liverpool where the small-pox prevailed, but had not been in contact with the diseased body. The chest had not been opened till it was returned, and the small-pox appeared at the usual time, without the least doubt of being produced from this source.

Our experience continues to confirm the opinion formerly given, that small-pox cannot give out infection till *the third day*. This fact is of much importance in easing the minds of those who are in danger; and affords some certainty to means of prevention and early separation.

VACCIOLA*.

While we were compiling our former Volume, a discovery, the most important in the annals of medicine, had just been announced to the world; that a disease in cows was *a preservative against* variolous infection. The manner in which this discovery was given to the public, by the celebrated author Dr. Jenner, was sufficient to rouse and command the attention of mankind, as well as the medical profession. That physician, by prudence and perseverance, not always united with new inventions, brought forward at the same time such a mass of evidence to defend his opinions, that after four years progress the subject has scarcely afforded any thing new.

The Jennerian inoculation was not long confined to Great Britain. The physicians of France, Germany, Italy, &c. with a promptitude and ardour which well became the discovery, embraced the cause, and extended the practice with equal rapidity and success. In Scotland, however, from what reason I know not, its progress has been marked by much cold indifference and neglect.

The names of the most respectable physicians and surgeons in London were quick in giving the most honourable testimony in support of the new inoculation, with a view of impressing society with its superior utility and importance, which certainly had the best effect. Amidst this cheerful countenance of individuals, a sullen silence was ob-

* This subject shared our attention in the preceding Volume, very soon after it had been announced to the world: and as our opinions were conveyed to the highest authorities, the hope was indulged of the navy being quickly benefited by Dr. Jenner's discovery. *Vide* Vol. II. Art. *Small-pox*.

served by a *certain body* of physicians, whose task it is perhaps more than any others, in their collective capacity, to watch over the health and safety of his Majesty's liege subjects; as being legally invested with authority for that purpose. I should be sorry to say, that these gentlemen are so tinctured with a corporation spirit, lulled in the pleasures of a wealthy and luxurious metropolis, or fettered by the emoluments of craft, as to forget what they owe to the dignity of the medical profession, as well as to society. Certain it is, that by the supine and tame disposition of this body, the quackery of the present day has made such alarming progress as to become a domestic evil and a national disgrace. It is from this example that the civil magistrate slumbers at his post, and a modern newspaper is now become such a vehicle of obscenity, from empirical advertisements, that a modest female can no longer look it over, either as an innocent amusement, or to learn the harmless fashions of dress, without meeting with expressions that delicacy cannot behold without a blush. Quack medicines may assist a budget of taxes, but woe must befall that nation which permits them at the expence of female virtue.

To the demeanor of this body also may we not, in a great measure, account for the delay of conferring civic honours and a pension on the immortal author of the vaccine inoculation. Surely the accomplished Mr. Addington, the son of a physician, and a polite scholar, cannot be long indifferent to such transcendant merit. Titles and fortunes have rapidly crowned the heroes of the war; let therefore the Minister of peace hasten to reward the benefactor of mankind with a suitable dignity. If, however, honours of this kind are to be denied on the occasion, let not Dr. Jenner

repine at the loss of what could neither add or impair the value of his discovery. Consolations much more gratifying are within his reach: the fond mother, as she caresses her infant charge rescued from the danger of a terrible distemper by his invention, will bless the name of Jenner; the beauties of distant ages, saved from deformity by his art, will weave garlands for his bust; and what the historian of medical science may forget to record, the songs of future bards shall add to his fame!

While the vaccine inoculation was thus beginning, and meeting very general support, the medical officers of the British navy were not inattentive to the subject; and very early attempts were made to introduce it among the seamen. But all these have been only partially followed up; and at the time I am writing it seems entirely given over. In the summer of 1800 I requested permission of the Admiralty to introduce it into the ships of the fleet, with a view of procuring full authority, that all prejudices might be obviated which could rise against it. This was however not thought to be the proper channel for such an undertaking; it fell into other hands, and, as was foreseen, soon became neglected. It would have been an easy matter for me to have directed the practice in every ship as she arrived from sea. In those instances where the variolous infection had been carried on board, and where I personally addressed the seamen on the safety of the vaccine inoculation, the measure was easily accomplished. Much good might therefore have been done with very little trouble: of two thousand men and upwards in the fleet who never had the small-pox, scarcely two hundred were inoculated with the cow-pox; and the remainder are left still exposed
to

to a dangerous disease, whenever it may come in their way.

For an account of the public compliment paid by the medical officers to Dr. Jenner, the reader is referred to the occurrences of the fleet.

In a communication on the subject of the vaccine disease, by my respected friend Mr. Robert Carruthers, late of the Unicorn, and now settled at Wareham in Dorsetshire, I have met with the following remark in confirmation of Dr. Jenner's doctrine: "I can now affirm," says Mr. C. "that
" my late father, a very old superannuated surgeon
" of the Royal Navy, and myself, have inocu-
" lated *many hundreds* for the small-pox, who
" had *previously* had the vaccine disease, none of
" whom we could ever get to receive the vari-
" olous infection. I have always observed, that
" those who have had the small-pox previous to
" the vaccine disease, have the latter very mildly;
" while, on the contrary, those who catch the
" vaccine distemper first, have it extremely
" virulent."

On the subject of the cows being infected by the grease of horses' heels, Mr. C. makes the following observations: "Having for some time past
" been busily engaged here, and in this neigh-
" bourhood, in visiting many sick at the different
" farms and dairies, where the cows were all
" afflicted with this distemper, the proprietors of
" which, upon my interrogating them, could not
" inform me how they came to be affected:
" but on casting my eyes round the different
" fields, I saw in each a greasy-heeled horse pas-
" turing with the cows, who were not in the least
" diseased previous to these horses feeding among
" the cattle. By which I am inclined to think
" with Dr. Jenner, whom I have not the honour
" of

“ of knowing, that the cow-pox takes its origin
“ from a greatly-heeled horse. However unplea-
“ sant the idea is, I am of opinion, at present, that
“ the cows, by lying down to ruminate, receive
“ the virus, which has fallen from the horses’
“ heels, by their teats coming in contact with the
“ contaminated grafs.—The cows may, I verily
“ believe, be afflicted with the distemper more
“ than once: the months they are most likely to
“ be diseased in, are from February to October;
“ for I never saw or heard of any being much
“ afflicted in any other months of the year. It
“ appears from this, that there is a certain season
“ during which the distemper is chiefly pre-
“ valent.”

The last remark of Mr. Carruthers tends to prove, that the summer months give some predisposition to the disease. Can the heat of the season have any effect in fostering, as it were, the inflammatory disposition, which attends the inserted virus? Yet, it is generally observed, that the variolous infection is chiefly prevalent in the winter months.

The vaccine inoculation was very early introduced into Plymouth, and Plymouth Dock. In the latter town Mr. Dunning, a gentleman of distinguished literary as well as medical abilities, entered upon the practice with all the warmth of a feeling heart and an enlightened mind. This gentleman soon favoured the world with some important truths on the subject; and his example confirmed the New Inoculation throughout the west of England *. Our surgeons, as they arrived

* *Vide* Dunning on Cow-pox.

from sea, became thus familiarized to the discovery, and began to practise at first with some earnestness; but the authority which I requested for myself not being granted by the Admiralty, I could interfere no farther; and, with regret, I beheld a plan pregnant with great benefit to the public and individual decline among our ships,

MEDICINA NAUTICA.

PNEUMONIA—CATARRH—OPHTHALMIA.

IN the variable climate of the Channel, and perhaps in all parts of the home-seas, diseases of the inflammatory class are very frequent in ships. Sudden changes of temperature in the atmosphere, whether from warm to cold, or the contrary, have been remarkably productive of these complaints; and I have generally observed, if they occur in the summer months, they act more effectually than in winter.

A ship's company lately returned from a tropical station, is very liable to catarrhs and bowel complaints for some time in the Channel cruizes. The best preservatives against these diseases are, sufficiently warm clothing, and attention on the part of officers, to prevent their exposure to unnecessary cold or rain in bad weather; and to check the pernicious custom of washing decks, when they cannot be immediately dried.

These diseases have on particular occasions become so general in ships, as to be considered of a contagious nature; and the vulgar appellation of influenza, with little scientific discernment, has

sometimes crept into the medical vocabulary of the fleet. The only epidemic catarrh which has ever occurred in the Channel this war, happened in February 1795, as related in our first Volume.

But, in a great measure independent of the condition of the atmosphere, catarrhs, pulmonic affections, and ophthalmias have, at different times, appeared in numerous cases in ships. This has chiefly happened since May 1800; and the causes of it are not beyond explanation.

When Lord St. Vincent assumed the command of the Channel fleet, many changes were made in the distribution of the ships, and a degree of vigour and activity was infused into the operations of the whole, that had not been known under the preceding Commander in Chief. There appeared indeed a want of his superior talents in the home-seas; and the effects of his decision and promptitude were soon manifested in the condition of the enemy. From that period to the conclusion of hostilities, the French ports were so completely blockaded that nothing got out, and the harvest of prize-money was therefore annihilated. Such vigorous and enterprizing measures necessarily called forth unusual exertions on the part of the officers and seamen. A better look-out, more frequent manœuvres and evolutions, with speed and correctness in the execution of these, kept the ships' companies more frequently aloft, and often exposed them to severe and long fatigue. To all these may be added, much longer cruizes than had been hitherto made in the Channel; with only a few days to refit when sent in, which rather increased than diminished the labour of the people.

In such situations of naval service, the able officer of a ship will be distinguished from the man of inferior abilities; and as far as it is possible, in
the

the execution of duty, he will endeavour to give his people no unnecessary toil. The rule for that must always be, that the refreshment from sleep at night should be equal to the fatigues of the day. The strength of a ship's company will thereby be reserved for proper occasions, for the hour of battle, or severe gales of wind. If the vital part of the machine was studied by some of our young officers with a little more attention, these parts of duty would go better on than they do at present. I believe, however, that such a calculation as I am now making, was little thought of in the operations of 1800. Zeal, activity, and perseverance, make a valuable system of naval tactics at all times; but it is the province of the discerning and intelligent mind, to calculate how long animal life can sustain this expenditure of its powers without recruit. Iron, timber, and hemp, in the construction of the vessel are quickly worn out by friction, and must be occasionally renewed, as is well known to the weakest understanding. Let flesh and blood therefore be duly supported by food, and regularly refreshed by sleep, and sufficient strength of muscle will never be wanting on urgent service. The nice criterion of discipline is to give seamen full employment without making duty a toil, and in all situations to remember they are men!

The body thus exercised is alternately heated and chilled; now drenched with sweat, now shivering with cold; till weakened with long continued hard labour, it becomes easily affected by the slightest changes of temperature. Coughs, catarrhs, stitches, dyspnoea, strictures across the breast, attended with more or less of fever, are the consequence.

The symptoms which more particularly mark pulmonic inflammation, are thirst, great heat, oppression, and pain of the breast, much increased in inspiration; flushing of the countenance, and sometimes headach and drowsiness. Pulse strong and hard, from a hundred to a hundred and ten, and the urine high coloured.

While some complain of catarrh and peripneumony, others are more troubled with inflammations of the *tunica adnata* of the eye, occasioning severe headach, acute pain of the globe of the eye, with profuse discharge of tears, inability of viewing the light, and a sensation of something like sand rasping the surface of the eye.

The ships of the advanced squadron, which were kept constantly at the very entrance of Brest harbour, had, from the nature of their duty, a much larger proportion of these complaints than others which composed the body of the fleet off Ushant, whose people were less exposed to weather and severe labour. Cynanche tonsillaris was also frequent on these occasions, but, like others, readily yielded to common treatment*.

But although the campaign of 1800, exhibited in most of the surgeons' returns an unusual proportion of inflammatory diseases, yet in the very month that some reported an influenza to prevail in the fleet, others remarked that their ships were never so free from catarrhal affections: among the last, was Mr. Bell of the *Bellona*. In the month of August and September catarrhs were frequent in the *Naiad*, not less than one hundred and ten, from the 20th of August to the 20th of September.

* *Vide* Mr. Outram's report for May 1800, among the Occurrences.

But

But in the *Amelia* the disease was not remarked till November, though cruising at the same place, when eighty-nine appeared in the course of that month. Such a difference in the condition of two ships at one time, is only to be explained from the different exposure to weather in their respective employments.

Mr. M'Arthur's account of the disease on board the *Naiad*, is thus detailed :

“ This month an epidemic catarrh appeared on board this ship, which at first was so rapid in its progress, and attended with so unusual a degree of fever, as to cause a considerable alarm. In one instance delirium had taken place; but this only seemed to be the effects of an aggravated state of the complaint on a weakly habit. For some time past it has been on the decline, and indeed may be said to have nearly ceased, for the greater number of those upon the sick-list have been ill a considerable time, and had previously complained of a chronic cough, or slight asthmatic symptoms. Notwithstanding, should we be exposed to bad weather, it is very probable that it will pass through the whole of the ship's company before it finally disappears.

“ The symptoms were as follows : A severe pain of the forehead across the eyebrows, as if in the frontal sinus. A red watery eye, with a sensation of fullness in the eye-balls, as if too large for the sockets. A coryza, a slight fore-ness of the throat, the uvula velum pendulum palati, and adjacent parts appearing inflamed and relaxed, but the tonsils were seldom enlarged. A cough, with pain under the sternum or ribs, and a pain and oppression in the region of the stomach, for the most part inclining to the right side, and resembling the pain felt in the

“ kind of jaundice proceeding from obstructions
“ of the billiary ducts, pains of the rheumatic
“ kind, affecting every part, but more especially
“ the back and loins. The tongue was covered
“ with a whitish mucus. Thirst moderate. The
“ skin dry, and imparting a fever heat to the hand.
“ The pulse quick, and generally full. There was
“ also a despondency of mind, and the utmost re-
“ luctance to motion. These symptoms were pre-
“ ceded by cold shivering, and for some days
“ costiveness. On the first attack, an emetic of
“ the tartarite of antimony was given, which al-
“ ways brought up a very large quantity of bile;
“ after the operation of the emetic, the bowels
“ were well opened by the *infus. senæ natron. vit.*
“ *colat. jalap. &c.* but afterwards at the recom-
“ mendation of Mr. Beard, surgeon of the Royal
“ George, I used calomel with the best effects.
“ In most cases it was unnecessary to employ any
“ medicine after the operation of the emetic and
“ cathartic, farther than amusing them with a
“ *placebo* for a few days, while they were recover-
“ ing their strength, and giving them some doses
“ of the cinchona previous to their return to
“ duty.

“ Where there was much cough, great be-
“ nefit was received from a free perspiration,
“ which was commonly induced by drinking
“ freely of some diluent liquor, particularly wa-
“ ter-gruel, taking at the same time an antimonial,
“ conjoined with an opiate. In some instances,
“ where the pneumonic symptoms were severe,
“ blood was drawn from the arm, and a blister
“ applied to the affected part; but the blood
“ never exhibited any signs of inflammation. It
“ was with the greatest reluctance the sick were
“ prevailed upon to leave their hammocks, and
“ required

“ required every cheering and consoling expression
 “ to make them walk about; but it is astonishing
 “ the sudden and salutary effects the cold air had
 “ upon them; on this account, the whole of the
 “ half deck was appropriated to them, with a
 “ view of having them constantly under our eyes,
 “ and to keep them walking about. It may be
 “ a question, if some of these had been permitted
 “ to keep their beds, whether the complaint would
 “ not have terminated in a continued fever. The
 “ sick were also made to wear flannel waistcoats
 “ next the skin, and the same recommended to
 “ the rest of the ship’s company. The Admiral
 “ took every opportunity of supplying us with
 “ fresh beef and vegetables; the former was wholly
 “ appropriated to the sick. Every care has been
 “ taken to keep the ship clean, dry, and well
 “ ventilated. The decks were not washed, but
 “ rubbed with stones and dry sand. All the store-
 “ room doors were kept open, and fires placed in
 “ the holds, tiers, &c. &c. and the men pre-
 “ vented, as much as possible, from lying down
 “ upon deck in their watch, exposed to the dew.
 “ These means are still persisted in, but from this
 “ I would not have it inferred that there is any
 “ idea of the complaint originating from dampness
 “ of the ship, for the decks were seldom washed,
 “ but scraped: fires were frequently between
 “ decks, and windsails pointed down the holds,
 “ and into the tiers, and the weather for a consi-
 “ derable time before was dry; therefore, in ac-
 “ counting for the appearance of this complaint, I
 “ can only attribute it to the influence of the at-
 “ mosphere, and not to any local cause; but it is
 “ very probable, the excessive intemperance of this
 “ ship’s company, when in port, may have predis-
 “ posed them to catarrh. On the 20th, 21st, and
 “ 22d

“ 22d of August, there was off Brest, a strong
 “ cold northerly gale, and the air contained a
 “ great deal of humidity. The weather then sud-
 “ denly became warm, and soon after this com-
 “ plaint appeared. On the 28th of August, in the
 “ morning, we had three men with catarrh upon
 “ the sick-list, and on the 1st of September, we
 “ had seventy-eight, the officers have suffered
 “ equally with the men; and latterly, many were
 “ slightly attacked that did not require to be put
 “ upon the sick-list: every symptom was relieved
 “ by a brisk cathartic. We are now between
 “ twelve and thirteen weeks at sea, but the slightest
 “ symptom of scurvy has not yet appeared amongst
 “ our people. Indeed they have every advantage
 “ of good clothing, and have the means of laying
 “ in a stock of tea, sugar, potatoes, &c. before
 “ they proceed to sea; and, I believe, at this mo-
 “ ment, there is not a mess in the ship that has
 “ not tea and sugar. It would have been happy
 “ for themselves had they on every occasion made
 “ equally so good a use of their money *.”

Mr. Morgan of the *Amelia*, in his report for November, gives the following account of catarrh.

“ A catarrhal complaint this month, resembling
 “ the influenza, made its appearance on board of
 “ us, soon after reaching our station off Brest.
 “ The symptoms were in general chilliness and
 “ shivering, succeeded by a hot fit, pains also in
 “ different parts of the body, and in particular the
 “ head, and sometimes the eyes, cough, and sore-
 “ ness in the throat, and stricture across the tho-
 “ rax, with some difficulty of breathing. The treat-

* This ship was one of the four frigates that captured the two Spanish register ships.

“ ment, antimonials with opiates, plenty of barley-
 “ water acidulated with lemon-juice, drank warm,
 “ where the pain and stricture in the thorax, blis-
 “ ters, and to relieve the cough, lac ammon. with
 “ ox. scillæ, or any other pectorals, with tinct.
 “ opii occasionally. The two men sent to the
 “ hospital were attacked with more violence at
 “ first than any of the rest, their coughs were ex-
 “ ceedingly troublesome, and a constant pain in
 “ the thorax, with difficult respiration, quick pulse,
 “ and other symptoms of pyrexia; they were bled
 “ at the beginning, blisters applied as near the
 “ pained part as possible; pectorals, combined
 “ with different preparations of antimony, and
 “ opiates, &c. &c. were given, but with little
 “ benefit; and, on our return, they were sent to
 “ the hospital as fit objects. The relapses were
 “ frequent, from the cold weather, but the symp-
 “ toms were in general of a milder degree.”

“ The cause of this complaint appears to me to
 “ be occasioned by the sudden transition of the
 “ weather, our last cruize for nineteen weeks we
 “ had uncommonly fine and pleasant, and since
 “ we returned to port, the men were constantly
 “ employed both night and day, that we felt but
 “ little of the cold till we got off the Black Rock,
 “ there we found the weather exceedingly cold;
 “ and, in the course of a few days, there was hardly
 “ a man (nor an officer), but were attacked in
 “ a more or less degree. The above are only
 “ those who were reported in my daily sick-list,
 “ and free from duty.”

Mr. Simpson of the Fisgard, commanded by
 Captain Martin, speaks of catarrhal and bowel
 complaints appearing about the beginning of Octo-
 ber, as usual at that season of the year. This
 ship was cruizing off Ferrol; the discipline here
 was

was of the first class; the human being received the first attention, as being the main spring of all naval operations, and the people's health was watched with the care and vigilance of paternal affection.

“ About the beginning of October, catarrh,
 “ with violent bowel complaints, grew rather frequent on board of us. At one time they
 “ amounted to twenty, and of these some suffered
 “ considerably. It generally began with a pain
 “ in the forehead, cough, pains in the breast, stomach, sides, and shoulder; a particular painful
 “ spasm about the *scrobiculus cordis*, bowels distended with flatus, and a frequent painful attempt to go to stool without effect. In one or
 “ two cases, there was at the commencement, a disposition to syncope. With others, there
 “ were nausea and vomiting. The urine was
 “ passed with difficulty, and in very small quantity, sometimes perfectly limpid; at others,
 “ deeply tinged. Epistaxis often accompanied
 “ this stage of the disease. In the worst cases
 “ there was a yellowness of the whole skin, and a dull lumpy feel in the right lobe of the liver.
 “ The worst cases had generally been coſtive for five or six days before they complained.

“ To every person, as soon as the complaint was made known, I gave an emetic: but as I found
 “ the action of vomiting difficult to excite in some who were before much inclined to vomit, I had
 “ to repeat it sometimes thrice before I succeeded. When the emetic operated, they always felt
 “ relief, a soreness at stomach only remained. The emetic was followed by a cathartic, generally pulv. jalap. the neutral salts agreeing less
 “ with the stomach than in common. If the emetic and cathartic operated duly, all the symptoms
 “ toms

“toms generally disappeared, unless the cough
 “remained a few days. In a few cases that were
 “disposed to relapse, four grains of calomel,
 “given twice a-day, entirely carried off all ten-
 “dency that way. I also had occasion to blis-
 “ter a few, when there remained deep-seated
 “pains in the breast, side, or shoulder.”

In this narrative, Mr. Simpson does not mention the state of the pulse; but it is evident, that the fever attending the catarrhal affections, &c. was of the typhoid kind, and the addition of opiates, after clearing the stomach and bowels, would have much assisted the cure.

On board the *Montague*, commanded by Captain Knight, catarrh was rather prevalent in the beginning of September. This ship was one of the inside squadron, and was uncommonly active. This scientific officer at that time employed himself in making surveys of the entrance to Brest, and discovered a fine roadstead where our men of war afterwards took shelter in severe gales of wind.—Mr. McDonald says:

“After leaving port, from having only two or
 “three men in the list, it increased in the course
 “of two days to fifty; two-thirds of whom were
 “catarrh, and some had it with aggravated symp-
 “toms. No deaths ensued, and it readily gave
 “way to emetics, opiates, and pectorals, assisted
 “by plentiful diluting liquors.

“This catarrhal affection has been, I under-
 “stand, very general in the fleet, and known by
 “the popular name of influenza, and said to de-
 “pend on a certain state of the atmosphere. Be-
 “that as it may, there is one thing clear, that it is
 “infectious, as in my own case. After having
 “seen the sick in the morning, I was seized with
 “a cold sweat, which was soon succeeded by chill-
 “ness,

“ nefs, and general forenefs all over me. My
 “ head ached violently, and there was confiderable
 “ heavinefs, and a fenfe of fullnefs over the frontal
 “ finufes: I became very hot, my pulse beat full
 “ and ftrong, and there was alfo felt a degree of
 “ fullnefs, attended with heat and pain in the
 “ internal fauces, a cough foon fupervened thefe
 “ fymptoms.

“ Thefe complaints were fo urgent, that they
 “ confined me two days to bed. I did not ufe
 “ any medicine, but indulged freely in thin dilut-
 “ ing liquors, which induced a copious per-
 “ fpiration, and foon produced a folution of the
 “ difeafe.

“ I have no doubt but you will agree with me,
 “ that this complaint is in fome degree infectious
 “ in crouded fituations. It had rained a little the
 “ morning I was taken ill, and the tarpaulin was
 “ laid over the forecaftle grating to fave the fick-
 “ berth from being wet. Thirty men were now pre-
 “ fent, all of whom I examined, felt their pulses,
 “ looked at their tongues, and infpected their
 “ fauces, as fore throats were common attendants;
 “ when you confider all thefe circumftances, you
 “ will readily forgive me for attributing my difeafe
 “ to infection.”

The number of catarrhal cafes that are men-
 tioned in the Sick Lift were eighty-feven. The
 Montague, in other refpects, was wonderfully
 healthy. But I object to this gentleman’s idea of
 infection. There is certainly no occafion for attri-
 buting his own inftance of the difeafe to that caufe;
 for a change of the temperature in the air was
 more likely to affect him than any of the hardy
 feamen, who are more accuftomed to fuch tranfi-
 tions. The preceding months, and fucceeding
 feafon, till June 1801, produced numerous in-
 flances

stances of catarrh in most ships. Much exertion of the people, joined to the effects of weather, sufficiently explain this occurrence, without having recourse to occult causes; as the disease originates from variations of the excitement, from different degrees of heat being applied to the body.

Let us suppose a company of six hundred men, in a cold frosty day, exposed for a long time on deck, till their fingers are benumbed, and of this number two hundred run to the galley fire to warm themselves, all of whom will be seized with hot-ach, followed by chilblains and sores. Under these circumstances it would not be correct in medical language, to say that the complaint was contagious, because a number were affected at the same time and in the same way, for the effect can be explained otherwise: so it is with catarrh.

In the Atlas, Mr. Johnstone imputed much of the disease to the effects of intoxication, as in that condition the people are apt to fall asleep on the decks at night. Such a cause as this will produce catarrhs and other complaints in any condition of weather.

In the month of August, when off the coast of Portugal, Mr. David W. Bell of the Indefatigable, gives the following statement of his sick, which appears to differ considerably from the prevailing catarrh: "About the beginning of this
 " month a great number of men, and three officers, were attacked with a spasmodic affection
 " of the breast. The symptoms, in general, were,
 " an oppression about the *præcordia*, great difficulty in respiration; and some with cough, and
 " inflammation of the fauces; but in those who
 " had the latter symptoms I observed the difficulty of breathing was not so great.—Antimonials, with æther, and some other articles, were
 " exhibited;

“ exhibited ; and in one instance blood was taken
 “ from the arm. But nothing seemed to answer
 “ the purpose so well as a blister to the part af-
 “ fected, which generally gave relief in the course
 “ of twenty-four hours. I am at a loss to account
 “ for the sudden manner in which this complaint
 “ appeared. We received water at Oporto, and
 “ had refreshments consisting of fresh beef, and
 “ a quantity of Onions. Some of the water, after
 “ being a fortnight at sea, had a taste of sugar of
 “ lead dissolved in it. At this period we had
 “ damp easterly winds after being constantly at sea
 “ for three months.”

The Namur had at one time a considerable
 number of catarrhs, and was the first ship where
 the disease was called influenza. This must have
 been some weeks before the ships mentioned
 above ; but no account of the matter was sent to
 me by the surgeon. The Princess Royal, Mr.
 Magin mentions as suffering from it ; but no other
 three-decker had at that time any unusual number
 ill of these complaints. Mr. Magin says, “ When
 “ we sailed from Cawsand Bay, the sick-list chiefly
 “ consisted of those labouring under what I have
 “ called *influenza*, in the above column, or fevers
 “ of the continued kind. The former disease I
 “ considered as contagious. For, besides the
 “ thirty-eight cases I have mentioned, (and which
 “ I thought worthy of being entered on my jour-
 “ nal, on account of severity of symptom,) twice
 “ that number were seized with that complaint,
 “ but in a milder form, and of shorter duration.
 “ In all these cases, I have marked the inflamma-
 “ tory symptoms ran very high, such as deep-
 “ seated and obtuse pain in some part of the breast,
 “ like pneumonia, oppression about the præcordia,
 “ and great difficulty of breathing, in two cases
 “ threaten-

“ threatening immediate suffocation. These symptoms were attended with a considerable degree of pyrexia at the beginning, and a hard, dry, tickling cough. The pulmonic affection in all was only relieved by repeated bleedings; in some *ad nonam vicem*.”

The sudden appearance of so many cases of catarrh and pneumonia, seems to have inclined Mr. Magin to adopt the idea of infection, like Mr. McDonald of the Montague. When we consider that there are so large a number of men in a ship, living in a similar manner, in health, with minds, customs, and habits, very much alike; it is but natural to suppose, that when these men are all equally exposed to causes of disease, that they will be affected in nearly the same manner, and at the same time.

For example, in the variable Channel weather, when a gale of wind comes on, particularly at night, all hands are called to take in sail, and prepare for bad weather. There is a great deal of work often to be done in a very short time, on such an occasion; and if it rains, the men being exposed must naturally suffer. If a discerning officer commands the deck, the evil will be lessened by the tender concern he shows for their safety, in directing them to shift, and not to lay down, either with wet clothes, or on wet decks. Now, during a repetition of such a duty as this, if thirty-six men, in the course of a month, are admitted into the sick list, with twice that number more gently affected, for catarrhal and pneumonic affections, still the proportion is not great, and only makes one out of seven in the complement of a second rate, like the Princess Royal. In Mr. Magin's list for October, I find no less than thirty-five catarrhs. The same ship, in the month of Feb-

ruary following, as appears by Mr. Lara's return, had thirty-four catarrhs. But in the last instance, as in the former, the disease, most probably, was caused by variations of temperature, or severe duty on the part of the people.

This discussion is not merely a speculative point; for if it is to be thought just that such complaints originate from infection, we may seek to *doomsday* before we detect the cause, on the one hand, while, on the other, it is before our eyes.

The employment of venæ-section in cases of pneumonia, requires caution and discernment among seamen. The reflecting surgeon will review the preceding condition of his patient's health; the nature of his duty for some time past; the food he has lived on; the season of the year; his habit of body; his length of service in tropical countries; the diseases he has been subject to: when he has minutely examined into all these circumstances, the present situation of the patient will be better discovered. The full, strong, and hard pulse, stricture and oppression of the breast, with laborious inspiration, indicate a large bleeding. Twenty ounces taken away at once will have more effect than smaller bleedings repeated. It is however sometimes dangerous to bleed a patient till the stricture of the breast is removed; venæ-section, therefore, ought to be accompanied with the other means for subduing inflammation, such as cool air, purgatives that cause quick evacuations, cold drink, but above all, the large use of the vegetable acid, as lemon juice. A blister may then be of much service. The propriety of blood-letting is also to be judged of from the time

time the patient has been ill. On the third day it would be imprudent to take the same quantity of blood away that might have been done on the first: a large bleeding, that would have been salutary, will now produce such a depletion of the circulating system, as to endanger immediate suffocation from effusion into the bronchiæ, or cavity of the thorax; which often happens, when it was supposed the patient had obtained relief by the stricture being no longer felt. At this period of the disease æther is often beneficial; but there ought to be a manifest change in the state of the disease, before opiates, and those medicines vulgarly styled expectorants, can be admitted.

In this disease, as well as in all others where inflammation is said to terminate by *resolution*, there is a period that seems to set all the powers of our art at defiance. This is that condition of body which exists between increased excitement and the debility that follows. If you bleed after the debility commences, you make it worse; effusion and hydro-thorax ensue; and if you stimulate before the inflammation subsides, you may induce suppuration. This is therefore the critical moment with inflammatory affections, and ought to call forth all the attention and vigilance of the medical profession.

In the treatment of ophthalmia, I can be very brief. This complaint, often trifling at first, is frequently aggravated by different collyria. Metallic salts, in solution, are common applications to inflamed eyes, and, to a certainty, make them worse, if employed when the vessels are turgid, and the pain acute. I know nothing equal to very

cold water, which has been my chief remedy for many years. The patient ought to be kept in a cool, dark place; and bleeding, local or general, purging, low diet, &c. attended to at the same time. In the succeeding stage, when the redness of the eye is rather the effect of debility and relaxation in the vessels of the *tunica adnata*, and specks appear from effusions into the coats of the eye, the common collyria may be employed with advantage. Plunging the face often into a basin of cold water, and cold lavation of the head and face, when the headach is severe, are excellent remedies.

This disease has often appeared in the ships of the fleet, when other inflammatory affections were common; to variable weather it has been chiefly attributed. A description of ophthalmia, as it appeared on the coast of Egypt, is given in the communication of Mr. Briggs, surgeon of the Ajax. The disease was extremely afflicting to the army on shore; but from its being met with at sea, a great distance from land, in the men of war, would seem to oppose some opinions that have been generally entertained of its causes.

MEDICINA NAUTICA.

PHTHISIS.

THIS disease has not hitherto been numbered among the maladies incident to Seamen, and a sea-life; but its frequent occurrence since April 1800, renders it a subject worthy of investigation: Some hundreds of cases of phthisis have appeared in the Channel fleet; many have attained the last stage, and terminated fatally; others have been invalided, and sent home, while a larger proportion, in the incipient stage of the same disease, have been successfully treated on board.

A sea-life has often been considered as a preservative against pulmonary consumption, and a voyage in a ship frequently recommended as a cure for the complaint. Cases have also been published of late, where the air in the lower parts of a ship was found of great benefit to phthisical patients. The hectic fever, urgent cough, and purulent expectoration, having all declined while breathing this atmosphere, supposed to be salutary, by being less oxygenated than the common air. We have

also on a former occasion remarked, that phthisis was rarely met with in King's ships, in which opinion we were justified by long and extensive experience. Something new and peculiar is now to be sought after in the investigation of the malady as it has lately appeared.

It is therefore of some importance, to examine the probable causes of this phthysical disposition among seamen, and in what respect it has been influence by

Climate and season;

Peculiarity of constitution;

Unusual exertions of duty, &c.

The preceding winter was not uncommonly severe as to cold, nor remarkable for fogs or rain. The ships were kept at sea the greater part of it, under the command of Sir Alan Gardner, who generally had his share of employment in the winter months. From February till near summer, a disposition to fevers of the typhoid type was more common than usually observed in Channel stations. In many instances these fevers could be distinctly, and without shadow of doubt, traced to imported infection: but in others, it plainly originated in the ship, and could not be imputed to causes which, at other times, as constantly produce typhus, such as personal filth, impure air, &c.

Throughout the whole summer months catarrh and pneumonia were frequent. The latter, in many instances, was fatal; and where recovery took place, obstinate coughs were often the consequence. But the surgeons did not in general remark, nor did I suspect, from the multitude of phthysical cases which I inspected, that they were a sequel of peripneumony. A large proportion of these cases were found in men advanced in life, or beyond what is called the phthysical period. Indeed
the

the old seamen of the fleet, fifty-four and upwards, were more than usual, at this time, found to be objects for the sick-list; and their complaints chiefly of the pectoral kind. They first felt the effects of severe duty.

The months of July and August were remarkable for excessive heat, and long dryness of the weather: yet even when the temperature was equal to West India heat, phthical affections were numerous; such a season indeed ought to have been reckoned favourable to these habits of body.

The usual peculiarities of constitution, which indicate a predisposition to phthisis were observable in most cases: persons with narrow conformation of the chest, high shoulders, long neck, smooth skin, &c. and in some the external marks of scrophula *. I also learned from many of the patients themselves, that they had lost relations in a similar disease, although among seamen such accounts are to be received with caution. If they found their own narrative apt to influence our opinions about the obstinacy, or incurableness of the complaint, they would not fail to coin histories that might facilitate their discharge from the service. On this very account the disease was often assumed by way of deception; for in some misguided hour, the Admiralty had granted to the hospitals the power of invaliding consumptive patients, by private survey, without any appeal to officers of ships. This practice became so glaringly improper, that

* This article has lost much value, from my not being able to peruse Dr. Hufeland's Treatise on Scrophula before it was finished. My friend, Mr. John Bell, had nearly completed for the press, a translation of that work, when the Pelican was drove on shore by a gale of wind at Jersey, by which accident his MS. was destroyed. He has not yet been able to turn his attention again to this subject.

facts were produced by almost every surgeon, that many of their best men had been discharged by that form of survey, who were found in perfect health a few days afterwards among the public houses. These facts were communicated to Admiral Cornwallis, at the time that five able bodied men belonging to the *Edgar*, as represented by Mr. Hill, had been invalided against his opinion, and only a few days before a general survey. The Board under Earl St. Vincent put a speedy stop to this kind of invaliding, so contrary to the spirit of service.

We therefore admit, that the predisposition to phthisis was apparent, or to be suspected, in all instances of this prevailing malady in the fleet, and was called into action by other causes, rather than by a peculiar condition of the seasons or weather.

The station of the fleet in blockading the port of Brest, if it unfolded new forms of service, new diseases have also been the consequence. The cruizes have generally been uncommonly long, with a restless mode of duty, and the time for remaining in port to refit, not only limited to a few days, but all hands employed in the most severe labour, with short sleep, and respite at night. Such exertions tend to wear out human life; and diseases of exhausted power must be the natural and inevitable effect. If it is true, as some physicians have asserted, that phthisis only occurs in scrophulous habits, we cannot doubt but the causes just mentioned are capable of exciting it. Hard labour and incessant fatigue, are the means of exposing the body to unequal and different temperatures; sometimes over-heated in the hold, or between decks, and when overflowing with sweat, chilled at a port by a current of air partially applied, and often wet
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on a deck, after being warmed below. Under these circumstances the lungs soon sympathize with the surface of the body; coughs, stitches, strictures across the breast, dyspnœa, hœmoptysis, and ulceration quickly follow, in persons with constitutions thus disposed.

In the milder climate of the Mediterranean, and the still warmer temperature of the West Indies, long cruizes, and severe labour while in port, have not been productive of pulmonary diseases. In the Channel, the duty hitherto had been conducted in a very different manner, and the causes which we have assigned were unknown. But as pectoral diseases of all kinds have, at this period been particularly prevalent, we search in vain for other reasons for their appearance.

A new form was also introduced into sea-diet at this time in the Channel, concerning which I was not consulted, and it never received my approbation, nor ever can. An ounce of lemon juice, with an equal quantity of sugar, diluted with water, was daily served as a preventive for scurvy. An acid used in this manner for many months together, could not fail to injure the digestive functions, and accelerate the emaciation and debility of phthisis. We are of opinion with those who confine the disease to a scrophulous affection of the lungs: Hufeland, I believe, has lately contended, that a superabundant acid exists in scrophula; and if this is true, the lemonade was adding to that disposition, as the mesenteric glands must have soon felt its effects, and become torpid from abstraction of stimulus. For these reasons, we have always preferred the esculent vegetables in preventing scurvy. But it is well known, that scrophulous constitutions are incapable of bearing much hard work; they are generally slender in make
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and their muscular fibres soft and weak, for which reasons they are the first to sink under unusual fatigue.

What is rather singular in the history of this disease, as it has appeared in the Channel ships is, that we have not in any instance observed it in the form of what is called the *florid consumption*. The complexion has been rather swarthy and pallid; nor has the concomitant hectic fever exhibited the *rubor generum*, that high flush of the cheek so generally remarked in the confirmed phthisis of other situations.

Dr. Darwin in *Zoonomia*, in his first class of diseases, order ii. genus 1st. species 9th. mentions *Hæmoptoe Venosa*: “ Venous Hæmoptoe frequently attends the beginning of the hæreditary consumption of dark-eyed people, and in others whose lungs have too little irritability. These spittings of blood are generally in very small quantity, as a tea-spoonful; and return at first periodically, as about once a month, and are less dangerous in the female than in the male sex; as in the former, they are often relieved by the natural periods of the menses. Many of these patients are often attacked with this pulmonary hæmorrhage in their first sleep; because in feeble people, the power of volition is necessary, besides irritation, to carry on respiration perfectly: but as volition is suspended during sleep, a part of the blood is delayed in the vessels of the lungs; and, in consequence effused, and the patient awakes from the disagreeable sensation.” Vol. ii. p. 70. 4to. edition.

This description from Dr. Darwin, would seem to throw considerable light on the disease in question, as all the causes which we have assigned might induce

induce *irritability* of the lungs, as well as of other parts of the body. The mode of cure that was found most successful, would also seem to justify this kind of reasoning; for opiates, æther, and other stimulant medicines, with the most nutritive diet that could be procured, had the best effects; while bleeding, and other means of depletion when employed, as certainly did harm.

The beginning and progress of this epidemic, for such we profess it to have been, but too often excited little suspicion. It generally commenced with slight rigours, followed by heat not much greater than natural, a tickling cough, difficulty of breathing, easily hurried by even gentle exercise or labour; debility, little expectoration, but sometimes streaked with blood brought up by coughing; heat in the fauces and trachea, frequently followed by blood brought up from the lungs, by hawking rather than by cough, and relieving dyspnoea and stricture of the breast for a considerable time; the patient, at the same time, expressing his feelings as if he had received unexpected ease. The pulse from the first, was frequent and weak; the voice in some, so altered and low, as scarcely to be heard, and stridulous; in others hollow, as if coming from a cave. The appetite for food of any kind quickly flagged, the muscular strength failed, with aversion to all motion. Though without pain, the hopeful state of mind, and flow of spirits, that are often observed, even in the last stage of pulmonary consumption, were unknown here: apprehension about their fate, and depression of mental faculties, were rather common. The bulk of the fleshy parts soon shrunk, and emaciation showed itself early.

The meridian and evening exacerbations of hectic fever, were not so distinctly perceived, as have
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been remarked in other conditions of life: in some it was fatal, without shewing much tendency to the hectic paroxysm; nor did we often observe the alternations of sweating, with the colliquative diarrhœa, so frequent in the last stage of phthisis.

In many instances the disease was rapid in its progress, and fatal in five or six weeks from its first appearance. A number of deaths happened at sea from the length of the cruizes; the complaint being advanced before known to the surgeon. But the affliction was much increased as the cases accumulated in the sick-berth; for there was now no hospital-ship to carry them to port, where change of scene, amusement of mind, more spacious apartments, &c. might have contributed to recovery.

If we have been correct in tracing the causes of this prevailing phthisis in the Channel, to the exhausting effects of hard duty, and severe labour, both at sea and in port, we are not to be surprized at the almost incurable nature of the disease, and the small relief that could be obtained from the exhibition of any article in medicine. The most early symptoms indicated an exhausted excitability; a debility induced by long continued and excessive exertions. In such a condition of body, what does a ship afford? The diet that was here of the first importance, was deficient in almost every article that is required to stimulate and restore the functions of depressed sensorial power. The surgeon's necessaries contain sago, rice, sugar, chocolate, and tea, that has lately been supplied, of so coarse a quality, as to be unfit for a delicate appetite; these, with portable broth, are the diet of a sick-berth in common ships. When I have examined the emaciated tenants of these quarters, in different

vessels of the line, as they arrived in Cawland Bay, often after twelve, sixteen, and even eighteen weeks absence from harbour, it has been matter of serious regret to me, that so many of my numerous applications on this subject should have met with no return*. I know not of what use medical establishments are among us, if in the practice of the art we are to be deprived of its most essential resources. Am I to look to the contents of a medicine chest for food and nourishment to my patients, famished for want of something that is grateful to the appetite, and capable of repairing their scanty juices. Yet during the prevalence of this unconquerable disease, most of our ships had on board large supplies of peruvian bark, from fifty to one hundred pounds, and upwards. This medicine probably cost twelve shillings per pound: but for what conditions of expected sickness it was thus gratuitously supplied, I can form no idea: no intelligent surgeon in Channel stations could ever dispose of the quantity; it must mould and spoil in their store-rooms. How much better would a share of this expence have been employed in some delicious article of food? This reminds me of the former condition of our hospitals, where you might prescribe twenty guineas *per diem* in James's Powder, without being allowed a single cup of tea for your patient.

The treatment of pulmonary consumption, till lately, turned very much, if not entirely, on the supposition of its being of an inflammatory nature;

* It was not till the summer of 1801, that live stock was sent to the fleet at sea.—When the hospital ship attended, I had it in my power to distribute sheep, porter, cyder, wine, fruit, eggs, vegetables, &c. when wanted.

not only from the beginning, but too often till the very last stage of emaciation and debility. The expectoration of purulent matter, which indicated an ulcerated surface of the lungs; the appearance of the lungs on dissection, and the hectic fever which attends confirmed phthisis, with the florid colour, and buffy coat of the blood when drawn, gave the full sanction to large evacuations of the vital fluid, and also to the unlimited use of milk and vegetables which composed the low diet of our predecessors. In no disease besides, was the steady and permanent employment of bleeding and weakening food so obstinately persisted in; and no morbid condition of human life ever exhibited such cruel examples of the inconsistency of medical theories. In some instances of my own attendance of consumptive patients, when very young in the profession, I have purposely avoided my usual visits, to shun the repetition of venæsection, though directed by the authority of a physician; as it appeared to me almost criminal to draw blood from a subject that was wasted to skin and bone, and fast approaching to the last stage of debility. Indeed the early part of my medical education was obtained in a market-town, to the neighbourhood of which a number of phthical people annually resorted in the summer months, for the benefit of goat-whey, a favourite beverage in the old practice for this mortal complaint. This annual groupe of afflicted visitors, was composed of all ages, sexes, and conditions. Some in the incipient stage, that were able to ride abroad, and enjoy the salubrious air of Cheviot hills, and the Northumbrian mountains; others verging to decline, sinking under profuse sweats and diarrhœa. Many of these seemed to have been dispatched from home, as much for the purpose

pose of relieving the *ennui* of medical admonition in a tedious illness, as for the trial or expectation of recovery. In such cases, the physician as well as apothecary becomes wearied by the same round of questions daily: their routine of practice is in a manner exhausted or worn out; and the helpless patients are sometimes ordered to try a change of air, to give respite to the barren repetition of medical consultations. For these or similar reasons, we have often seen the dying consumptive, in the worst stage, cruelly sent abroad, to end his days in a foreign land, instead of being permitted to breathe his last in the arms of relation and friendship.

The patients that resorted to our neighbourhood had been all repeatedly bled; with the view, as supposed, of subduing the inflammatory diathesis, and the early formation of tubercles. Yet, however generally this practice has been adopted, it rests on very slender foundation; for debility is among the most early and prominent features of phthisis. A very quick pulse attends the first symptoms, and more easily accelerated than in almost any other complaint. All consumptive habits have a peculiar delicacy and softness of skin, and also of muscular fibre, which strongly indicate constitutional weakness. In such conditions of body we cannot see the signs of increased excitement and vigour, which point out venæ-section. We rather suppose that bleeding, even in the first stage, has had a great share in inducing that debility which we wish to avoid as the certain consequence of the disease, and thereby hastening death. Bleeding, therefore, on the first suspicion of a phthisical tendency, appears to have been generally practised, with a view to overcome some inflam-

matory

matory affection of the lungs or thorax, of which there are no sufficient proofs.

Analogous to the subtraction of the vital fluid, is the dietetic regimen of milk and vegetable food. These also have been directed to reduce the habit, and lower the inflammatory tendency. However much I am inclined to venerate the authority that defends this species of diet in phthisis, I must confess, that my own observations have, on all occasions, deduced unspeakable mischief from its indiscriminate application. How often have I seen the unfortunate patient sinking under goat-whey and vegetable food, amidst all the tortures of a colliquative diarrhœa, depriving the body of its nourishment, with a rapidity not to be equalled! But the dyspeptic affections which are apt to follow the use of vegetables in female constitutions particularly, oppose powerful arguments to this kind of diet; and in many cases it cannot be taken in any form or quantity.

If the diet of milk and vegetables is attended with so many inconveniencies, it may be asked, what then is the most proper food for phthisical patients? It is difficult to lay down general rules, on a subject that must be varied to different constitutions. The impropriety of animal food, and stimulating nourishment have been contended for, from their heating quality, exciting fever, increasing the circulation, and thereby encouraging the profuse perspirations. It would appear, however, that this effect has rather been marked in the last stage of the disease, when the emaciation and debility were considerable, and when the exhibition of all kinds of stimuli requires the utmost caution. We see this strongly exemplified in the quick, and almost instant flush of the cheek, which

which soon spreads over the face, and is often followed with drowsiness and sleep, after eating or drinking any thing warm, even a cup of tea, a small glass of wine and water, or small-beer. The breathing also, at the same time, becomes quick and laborious, and the voice fails so as hardly to be understood; no doubt these effects proceed from the narrowed capacity of the lungs to receive the increased quantity of blood, that is thrown into the pulmonary artery by the more active circulation. In proportion, therefore, to this inordinate excitement, unusual languor, and inaptitude to motion succeed; but frequently also the expuition of pure blood.

This susceptibility to stimulus in the sanguiferous system, would imply an *increase* of irritability in the arteries, while the lymphatic system is rendered unusually *torpid*. But it is, in the florid consumption more particularly to be observed, than in the phthisis of which we have given the history, that such a character obtains. Hence the cure would seem to turn very much on diminishing the irritability of the circulation, and increasing that of absorption in the respective vessels. To suit the degree of stimulus, whether of diet or medicine, to the susceptibility of action, would therefore appear to be the golden rule in the treatment of this fatal disease.

When the hectic fever becomes exquisitely formed, when all its characteristic circumstances appear regular and uniform, with great debility and emaciation, I think with Dr. Cullen there can be no recovery. In this stage of the disease, as medicine is exhibited in vain, so no kind of regimen in diet can be made perfect. The period is now past, and the opportunity lost, when nourishing food might have sustained the patient; and

warded off that weakness which was to be expected in the course of the disease. If we are at all right in what we have expressed of constitutional peculiarities in those who are subject to phthisis, we would strongly recommend a more nutritive regimen in the early stage of the affection; for it appears to our observation, that such habits of body are not capable of bearing large evacuations, spare diet, or any labour that induces excessive fatigue.

If, however, we consider phthisis as a scrophula of the lungs, we do not mean to infer from this, that all families are scrophulous when consumption has appeared in one person. This habit may be acquired by certain debilitating powers; and particularly by damp ill-aired lodgings, want of cleanliness, and poor diet. I also think, that this acquired scrophula may become so constitutionally fixed and obstinate, that a disposition to the disease may descend to the offspring of such people. The present times of scarcity will probably operate widely in increasing this kind of scrophula, as well as other complaints that originate from penurious nourishment. A small portion of bread and potatoes, with the most watery vegetables, and no animal matter, have been the chief food of a large part of the lower orders of people in the united kingdoms for twenty months past. May the present prospects of a plentiful harvest be speedily realized *!

But the disposition of scrophulous ulcers, when exposed, as on the surface of the body, in the glands of the groin, axilla, or those under the lower jaw, is exactly analagous to the ulcerated surface of the lungs in phthisis. These glands, when

* Summer 1801.

they first swell, give little pain, scarcely assume increased action, are indolent and long in suppurating. Their appearance, indeed, after their bulk has enlarged, and mechanically distended, or separated, the common integuments can hardly be called suppuration. The matter that flows from the exposed surface of the wound, is rather secreted from the surrounding parts, little or none of it comes from the body of the lymphatic gland itself; it continues hard and torpid. On the whole, scrophulous sores have a distinct character, and exhibit a condition of body that cannot be construed into inflammatory diathesis; for neither a rigid fibre, strong, hard, full pulse, with what is called dense blood, are found to be present.

The smooth, soft, and shining skin, sparkling eyes, with large pupils, and florid cheeks, have too often led medical people, as well as common observers, to consider those external signs as so many tests of health and vigour of constitution. This idea has been so strongly fixed, that even the deceitful flush of the cheek, during the exacerbation of the hectic paroxysm in the last stage, has been construed into a symptom of fullness; and, horrible to relate, led to the murderous repetition of phlebotomy.

The indolent disposition of lymphatic glands, shown by their tardy progress towards suppuration, and the obstinacy of cure in the ulcerated state, receive at once a better explanation, by considering both in a condition of deficient excitement. The scrophulous tumor and ulcer are most easily discussed and healed in the warm summer months, and apt to recur again in a cold season. I have also seen them gradually subside among sailors, as the ship, in a voyage to the West Indies, approached the tropical latitudes; continue well in

a sultry climate, and afterwards return, on the passage to England. In the same manner the phthical patient obtains alleviation of his complaint in hot summer weather that is fine and equal; and the most certain prevention of the disease, is a journey to a warm climate, that has no winter; and to continue there till forty-five years of age. The constant high degree of temperature within the tropics, free from those sudden vicissitudes peculiar to our island, preserve the body in a steady and permanent degree of excitement; and thus the heat of the atmosphere appears of all stimuli to be the most congenial and salutary to the scrophulous habit.

Scrophula itself, by the ablest writers, has been justly considered a disease of the lymphatic system, and particularly the glandular parts of it. The affection itself, most probably consists in the *torpor and inirritability* of these glands. Indeed the whole absorbent system, although endowed with muscular power, is not prone to excessive action, or very susceptible of stimuli. We even observe that poisons which are capable of destroying life, are taken up and transmitted to the blood by absorbent vessels. The most deleterious of all contagious matters are often carried along the lymphatic vessels without the intervention of a bubo; and produce general disease throughout the body, with but a trifling feeling in performing their office. The venereal virus of a chancre does not always excite tumor in the groin during its absorption; as we frequently find ulcerated tonsils and confirmed lues without that previous symptom. The variolous matter, indeed, excites a transitory pain and swelling in the axilla after inoculation; but these glands very seldom suppurate from that cause. In my own practice I have not seen above two cases

cases of axillary bubo from inoculation. These facts tend to show, that the absorbent system, even in its healthy natural state, is not remarkably irritable; but that in scrophula, even this irritability is still more impaired, as appears from the indolent tumified gland, and ulcerated surface. If, therefore, there is any analogy between the scrophulous sore on the external parts of the body, and the ulcer of the lungs in phthisis, it will, in some measure, explain the incurable nature of the disease.

But to return to phthisis, as it has lately appeared in the Channel: In laying down rules of practice, a variety of circumstances are to be taken into account, that are not usually met with in the treatment of consumption in other situations of life.

In the investigation of this complaint, it will easily be perceived by the medical reader, that we scrutinize causes chiefly with a view to preventive practice. This can never be accomplished without the knowledge of what has, or can injure health. The physician who attends to the operations of a fleet, must often view occurrences that relate to disease in a light very different from an officer. The facility and rapidity with which a manœuvre, or point of duty can be executed, may please the one, but cannot always delight the other. Hence the value of a system of prevention. When new diseases appear new causes are to be suspected; and it is our province to find them out, and hold them up to view.

That there is some certainty in our reasoning on the production of this consumption from severe duty at sea, and little relaxation while in port, is evident from its being already little known, while I am writing (Summer 1801). The ships are

now served with live-stock at sea, and a large allowance of fresh vegetables; fewer signals are made for the purpose of parade or manœuvre; and four days are added to the six, which make ten, for refitting in port.

That new causes were to be assigned, we judged from the rare occurrence of the complaint among seamen, a sea-life having been hitherto accounted a safeguard against it; and a voyage recommended and found salutary.

But at the same time we think it fair to acknowledge, that these causes, in producing pulmonary consumption, almost apply to persons of constitutions predisposed to the affection, and perhaps confined to scrophulous habits.

The first attempts towards the cure of our phthisis were therefore a removal of the remote causes; or, to speak more correctly, to remove the patient from their action; which was to take the seaman into the sick-list, and to indulge him with all the comforts that could be procured.

The great advantage of exemption from duty, is the full enjoyment of all the restorative effects of sleep. Such a transition from the constant labour of trimming sails, getting wet with rain at one time, at another warmed to sweating, and then suddenly chilled: I say to be secured against all these causes of this disease, is more than half the cure. To any human being, who has been debilitated by excessive and long fatigue, and exposed a great part of the night to inclement weather, how acceptable must a whole night's sleep be! how refreshing! and what grateful sensations must the morning afford! This has indeed been amply proved in the different sick-berths of the fleet; for more than half the cases of all admitted into the sick list, have been affections of the breast;
which

which are generally more relieved by rest, and a few nights of comfortable repose, than any other complaint.

The best cures which I have witnessed during this prevailing malady, appeared to have been more owing to regimen than medicine. These happened in ships that had greater advantages of diet than others; and where the patient had not been weakened in the early stage by bleeding, under the idea of relieving stricture of the breast, as a supposed attendant of pneumonia.

A multitude of cases have however been presented to me at different times, under the appellation of phthisis, that I believe had no disposition towards it. Uncommon recoveries have therefore been said to take place, as the effects of particular articles of medicine and superior treatment. All accounts of this kind are to be trusted with some qualification. Miraculous cures, even in the stage of purulency, have been talked of; but at the same time so vaguely detailed, and with such total neglect of the operation of other powers on the body, that little credit is to be given to their histories. What is called purulency in the complaints of the breast, is too often a mis-applied term: and physicians who go by certain rules to distinguish *pus* from mucus, have more faith in the experiments which have been made on this subject, than I am disposed to give them. Pus expectorated from the ulcerated surface of the bronchiæ, must be blended with so much mucus from the surrounding parts, in the effort of coughing it up, that it can almost never be expectorated pure. Much also must depend on the time it has been exposed to the action of the air in the lungs after it was secreted, by which the more fluid parts must have evaporated, or been ab-

forbed; and from which both colour and consistence become altered. Can any person deny that these changes may not give different results to experiments of this sort: the mistakes that are committed every day, show the uncertainty of the conclusions deduced from them. We ought therefore to be very cautious in forming judgement on the appearance of expectorated matter, unless we want to impose on the credulity of our patients, by making them believe that we cure a galloping consumption, when we have only relieved an obstinate catarrh.

The word *hectic* has also been often very improperly employed in speaking of pectoral complaints. With some medical people every febrile feeling is magnified into a genuine hectic paroxysm; and a simple cold is all at once dressed out with the pompous trappings of technical phraseology. Some of our "case-coining" doctors, in furbishing up their ephemeral productions, have lately given wide scope to the use of these terms.

The treatment of hectic fever, in no system of medicine that I am acquainted with, has yet received those instructions for regulating the practices that are laid down in all other species of fever. As a sympathetic affection, and associated with some primary disease, its prevention and cure must be conducted on the principles which overcome the original complaint. Yet the history of hectic fever itself is curious and interesting. In some cases of phthisis I have seen the cold stage so long and severe, as to assume more the appearance of a vernal intermittent, or what might be called a double quotidian, than the common form of hectic, as a concomitant of purulency. In one case I directed opium and cinchona some hours

hours before the accession: at first this plan seemed to promise advantage; but a few days' trial convinced me of its inefficacy; there was a strong hereditary disposition to scrophula in the patient's habit.

The alternations of the hectic paroxysms with the colliquative diarrhœa are singular phenomena in the animal economy. If Dr. Darwin's classification of diseases is correct, volition and irritation would seem to be the two faculties of the sensorial power, that are especially impaired in phthisis; sensitive and associated motions are increased in proportion. Increased sensation is strongly apparent from the fortitude of mind with which they support affliction; and the lively hope of recovery, often retained to the last moment. I have been frequently asked, a few hours before death, by my patients, in how many days I thought they would be able to perform a journey. It has been my lot to attend some young ladies in this disease, both married and unmarried, possessing the most elegant accomplishments of mind, and in form and beauty beyond all the powers of description. There are few physicians but must have felt the painful task of professional attendance in such melancholy cases;

“ Condemned like me to hear the faint reply;
To mark the fading cheek, the sinking eye;
From the chill'd brow, to wipe the damps of death,
And watch in dumb despair the short'ning breath *.”

* Et hæc generis humani strages immanis in juvenes præcipue cadit, sæpe in formosissimos, præcipue sequioris sexus, et in eos qui ingenio, et animi et corporis elegantia, præstant. Pauci sunt quibus, cognati, familiares aut amici, hac peste abrepti, non sunt lugendi. Misera hæc tabes, sæva, atrox et insensibilis, teneros et amabiles depascens, cæde et luctu patriam implet. — Gregory. *De morb. cali, mut. med.*

Increased

Increased association is exemplified, whether we consider the hectic fever merely as the effect of sympathy, or the consequence of absorbed purulent aerated matter. Nothing can be more strongly marked than the alternations of this paroxysm with diarrhœa, as the one subsides, the other appears, and *vice versa*. In all this stage it is surprising, that the ulcerated state of the lungs should give so little pain. A malady that sometimes continues for twenty years, and proves fatal at last, would surpass all human afflictions, were it either remarkable for acute pain, or the dread of dissolution.

In the treatment of hectic fever therefore, as far as our present knowledge goes, little can be done; the body ought, if possible, to be preserved in a warm and equal temperature, very much with the view of preventing the suppression of the cutaneous discharge, which is so apt to fall on the bowels, and produce diarrhœa. The diarrhœa itself is a more painful symptom, more quickly reduces the health of the patient; and as the condition of the original disease at this period, can afford very slender hopes of recovery, the medical attendant can only alleviate what he cannot cure, by prescribing those means which determine the hectic paroxysm to the surface of the body. Warmth in bed, warm diluting drinks, with a small portion of wine; glysters with opium, warm bath, pediluvium, opium with mist. cretæ, aromatics and æther, &c. are chiefly to be depended upon*.

* Dr. Cullen used to relate the case of a gentleman of Philadelphia in phthisis, who passed his winters in the West Indies, by way of relief. But happening one season to miss his passage, he fell upon the expedient of keeping within doors, in a room heated to the temperature of Jamaica, and found similar relief, till the summer returned.

A class

A class of medicines, named *Expectorants*, have been long employed in the treatment of this disease, and all affections of the breast. No term, however, in our language seems to have been more misapplied than this, nor have the effects of any article in the *Materia Medica* been less understood. Expectoration is that discharge of mucus from certain glands, or exhalents, on the surface of the bronchiæ, which is occasionally brought up by hawking or coughing. By remaining in the air-cells for some time, it becomes thick and opaque, from the absorption of its fluid parts, as happens in sleeping. Expectorant medicines have therefore been considered, as promoting the secretion and excretion of this substance, from the idea of evacuating the pulmonary vesicles, and relieving the lungs. If the air-cells are unusually clogged with mucus, pus, or serum, a difficulty of breathing, and anxiety follow, with an effort to discharge the offending matter, that the lungs may be duly expanded; to assist in this office expectorants are indicated. But the circuitous course which these medicines are to make through the stomach and circulation, to arrive at the lungs, and there to exert a specific power, renders their utility extremely suspicious. They consist chiefly of gum-resinous matter, mucilaginous, and oleous. If the first are useful, they must act by exciting the stomach, and, by consent of parts, the lungs afterwards. The mucilaginous and oleous expectorants can only act mechanically, by defending the fauces when excoriated, or over-sensitive by inflammation, and thus by sympathy, relieving the irritation of the pulmonary surface.

Pains of the breast, sometimes acute, and at other times obtuse, with what are called strictures across the chest, are frequent attendants of phthisis.

The

The intercostal muscles are often too sensible to be pressed, and a deep inspiration produces exquisite pain. In this situation, respiration is more like panting than breathing, and the action of the lungs appears so laborious and oppressed, that the patient would seem in the agonies of death. Throwing cold water on the face, will sometimes terminate this paroxysm, as it does a fainting fit. Blistering the part is a common remedy; but before a blister has time to rise, much pain must be endured, and relief seldom comes with it. Frictions, sinapisms, and dry cupping, as it is called, are all useful. Æther rubbed on the spot will often give immediate ease; inhaling æther, and even swallowing it, afford relief; but opium seems rather to add to the anxiety, by quickening the circulation through the lungs.

The stimulant powers of opium, apparent from the quickened and fuller pulse, flush of the countenance, &c. much resemble the effect of vinous spirit: the stimulus of both is chiefly determined towards the circulating system, and seems to have rendered their effects very doubtful in florid consumption. But in the Channel phthisis much good was observed from opiates, particularly where the body was under the influence of digitalis.

Riding on horseback, the famous remedy of Sydenham, like swinging, is said to retard the frequency of the pulse. The good effects of it are strongly exemplified in the case of Dr. Currie, a name dear to human nature, as published in *Zoonomia*: but it scarcely comes within the range of our present inquiry. What I have seen of it elsewhere, in a great number of patients, does not enable me to speak of it with any commendation, more than as being a healthy exercise, it is favourable to phthysical debility, promotes muscular strength,

strength, and a regular circulation, excites appetite, and conduces to salutary sleep.

As chemical and experimental philosophy have improved in an inquiring age, medicine has acquired fresh resources, and new paths to investigation have been opened to ingenious minds. Dr. Beddoes having observed in pulmonary consumption of the florid kind, a colour in the blood that indicated a high degree of oxygenation, has proposed a method of cure, that might subtract oxygene from the system, by the patient breathing a *lowered* atmosphere, or one that had a smaller proportion of vital air, than that of our common atmosphere.

Although this opinion was mere *hypothesis*, yet the practice is justified by strong analogies. It is proved from the experiments of Priestley, Godwin, and others, that the blood derives its florid colour from oxygenous gas, during its circulation through the lungs. Men employed in particular kinds of trade, are known to be exempted from consumption; and our opinion has been adduced, that seamen are scarcely affected with it. The history given in the present article affords the only exception to this general observation. If, however, that learned physician mistook the effect for the cause of the disease, it may in some measure account for the want of success in the trials which have been made, from respiring a reduced air. But if nature can permit an unusual quantity of oxygene to be taken into the circulation from the surface of the lungs, not only ulcerated, but almost destroyed, in this instance, she does not act with her constant rule of preserving. It might be conjectured with equal propriety, that in florid consumption, the body has lost its capacity for giving out oxygene, and circulates it through the blood-

vessels

vessels without expenditure, or forming those combinations which it effects in more perfect conditions of health. Those constitutions which bespeak the highest disposition to scrophula, are most florid in the colour of the complexion: perhaps this hyper-oxygenation of their blood, is owing to so little of it being expended on the lymphatic system, which may produce that *inirritability* of these vessels and glands, which I conceive to be the proximate cause of all strumous affections.

Since my correspondence with Dr. Beddoes on this subject some years ago, I have paid more attention to it. The atmosphere in every deck of a ship, I believe may be justly said to be lowered, not only by a great number of men breathing in a small space, but the moisture and contents of the hold are a copious source of non-respirable gases. What is called the vapour of *bilge-water*, that so quickly tarnishes paint and metals, is nothing else but hydrogenous gas, that is evolved in the hold or well, during the production of carbonic acid gas. The inhabitants of the cockpit and bread-room are always more fallow than others: among the surgeons, I have uniformly remarked the complexion more swallow, in proportion to the size of his ship; for in frigates, and smaller vessels, their cabins are in the gun-room*.

But I am of opinion, that the salted diet of seamen is also a preservative against phthisis; for marine salt, or muriated soda, powerfully excites the absorbent system, and thus preserves the habit from scrophula, the pulmonary ulcer being entirely of that kind, and seldom curable. This favours

* The sea-air, nevertheless, must be accounted still purer than the shore.

the exhibition of sea-water in glandular ulcers and swellings; a practice which, I believe, from being so ungrateful and nauseous, has seldom been fairly tried. What satisfies me best in the cure of struma, is flor. sulph. combined with cinchona in powder, taken so as to keep the bowels scarcely lax; to be accompanied with strengthening diet, and persisted in for many months.

I do not however think, that Dr. Beddoes's plan has been yet completely reduced to practice. It must be attempted on a large scale to have the desired effects; but no private physician can afford expence sufficient for this. The present age has long been employing its resources in the slaughter of mankind, and it must change its political temperature, before it can think of devoting these sums to save the human race from pain and disease. The present minister is the son of a physician, and proposals for alleviating affliction on the bed of sickness, may, from habits imbibed by the example of such a father as Dr. Addington, incline him to allow some trifle out of the Treasury for this christian purpose. "*To whom much is given, much will be required.*"

A medicine of still more efficacy in the cure of phthisis, has been the subject of much praise in the journals of the present day, the digitalis, or fox-glove. If we are to trust the reports of some physicians, it may be deemed infallible. All accounts of this kind are, however, to be received with caution. The history of our epidemic in the Channel has sufficiently convinced us, that we ought to be very guarded in pronouncing a disease of the breast to be phthisis, though very nearly allied to it in the general concourse of symptoms. We know that the presence of purulency is extremely ambiguous in a multitude of cases, and

the hectic paroxysm is often said to be confirmed, when the febrile accessions were nothing more than what attend an obstinate catarrh. It is true, that a number of cases were sent on shore in genuine phthisis; but along with these have also been sent many, where there was only a probability of the disease assuming that form. If, however, we are to reckon the recoveries which happened on board, under these suspicious appearances, the surgeons of the Channel fleet would have the credit of restoring to health more desperate cases of consumption than are to be found in the records of medicine.

In most ships, the fox-glove in all its preparations has been tried. Some of the surgeons took considerable care to obtain the plant in full perfection, and gathered it in the vicinity of Torbay and Plymouth, where it appeared in its usual vigour. The exhibition of it was watched with more than common attention, as the surgeon of a ship at sea has it in his power to visit his patient with more punctuality than any where else. The effects of the medicine were therefore minutely attended to, in the state of the pulse, the feelings of the patient, and condition of the expectorated matter. The results were various, and though, on the whole, much in favour of the digitalis, yet they fall short of what is narrated by others. Indeed, numerous collateral circumstances are to be weighed in drawing a comparison between our phthisis and the disease, as it occurs in that department of life, from whence only all preceding authors have collected their history and treatment. The habits acquired by a sea-life, the nature of diet, the atmosphere of a ship, the vicissitudes of season and climate, to which seamen are exposed, joined to moral causes, that give a peculiar character to them, whether in health or disease, open a wide field

field for observation, that cannot be explored by the common rules of investigation. When we see a long list of cases, in this or any other disease, dressed out *secundum artem*, for the public eye, asserting, in dogmatical terms, the efficacy of particular medicines in the cure, we cannot help repeating, that the reader ought to pause and ponder, before he gives implicit faith to their histories.

One of the best cases of phthisis cured by digitalis, which our catalogue affords, was in a private marine on board the *Barfleur*, the flag-ship of Rear Admiral Collingwood, and attended by Mr. Richard Lloyd. The difficulty of breathing, frequent pulse, and suspicion of purulency in the expectoration, very quickly yielded after the exhibition of the foxglove. But the patient had none of those exquisitely formed symptoms of hectic, which mark the dangerous stage of pulmonary consumption. The effects of the medicine, in powder, were most carefully watched: the highest range of the pulse, at first, was 104, or 106; and it was never permitted to sink below 70. In such cases it must be of great importance to know the healthy standard of the patient's pulse; for if so much strength is abstracted from the arterial system, by the stimulus of the foxglove, as to bring the pulse much below the common number, a great deal of debility must be induced, and the disease augmented. Yet it appears to me, that the virtues of digitalis purpurea have been greatly over-rated; and I rather suspect that these unmerited eulogiums will hasten its disuse. It is a difficult point, in the practice of medicine, to ascertain the effects and virtues of an article of *materia medica*. No cure has been effected by foxglove by myself.

The *squill*, in its manner of operation, and in its effects, very much resembles the foxglove. It produces nausea and vomiting, abates the fre-

quency of the pulse, and powerfully excites the absorbent system. Hence it has been employed in the diseases of the breast and in dropsies. In the latter disease, I conceive it to be a more safe and efficacious medicine than *digitalis*; but it has, I believe, often lost much of its reputation from want of attention in preparing it. An advertised medicine, that has received a long list of noble names to recommend it, and said to have put thirty thousand pounds into the pocket of an impudent and illiterate quack, I think, is squill, disguised by syrup and aromatics.

My attention was directed to the squills a few years ago, by observing a great difference in the effect of what was prepared by my brother Mr. Andrew Trotter, now a surgeon in North Shields, and the powder made by another person, in the treatment of dropsy. My method of preparing the squills was to slice them in the usual way, to tie them up in a few folds of paper, and allow them to hang near the kitchen-fire for some three or four weeks. They were then pounded carefully, and after being finely sifted, they were a second time dried in paper, and, lastly, rubbed into an impalpable powder in a mortar. Of this powder, made into a pill, I usually gave from fifteen to twenty grains, without the slightest sickness, in the course of 24 hours: but the effect, in producing a flow of urine, was in some cases so considerable, that rollers were necessary to the abdomen; with such rapidity did the swellings subside.

If therefore, as I suppose, there is a strong resemblance in the operation of squills and fox-glove; the former, attentively prepared, has a strong claim to our regard in the treatment of pulmonary consumption, and probably also in the cure of scrophula.

The

The following communications on the exhibition of digitalis in phthisis come from two young surgeons, whose advantages of education, and natural endowments, were capable of directing the medicine with ability equal to any who have spoke on the effects of it in cure of this disease.

“ The Right Honourable Lord Aug. Fitzroy,
 “ of a delicate and tall form, with narrow and
 “ depressed chest, square and prominent shoulders,
 “ long neck, fine white teeth, and large blue eyes;
 “ of that particular structure of body, and acute-
 “ ness of mind, which all writers have charac-
 “ terized as particularly liable to phthisis pulmo-
 “ nalis; has, to my knowledge, had a cough for
 “ five months; most troublesome in the morning,
 “ with frequent twitches and pain of the side, par-
 “ ticularly during easterly winds, or thick hazy
 “ weather: hurried respiration on any exertion;
 “ a distinct attack of hectic fever at noon and
 “ midnight, the latter terminating in profuse col-
 “ liquative sweats, with great debility and emaci-
 “ ation. The expectoration was at first thin and
 “ frothy; but of late has become more purulent.—
 “ He has been using mucilaginous mixtures, with
 “ opium, myrrh, and conserve of roses, for the
 “ cough; diluted sulphuric acid to restrain the
 “ hectic sweats; and tinct. gentian. comp. to ex-
 “ cite an appetite.—Of late there has been a great
 “ tendency to diarrhœa, which was promptly
 “ counteracted, by means of catechu, kino, opium,
 “ and other astringents.—The digitalis purpurea I
 “ have also carefully tried, to the extent of nine
 “ grs. daily, and continued for a considerable time,
 “ without any visible effect, unless exciting a
 “ greater flow of urine.—When I take a retro-
 “ spective view of the case, I feel the most painful
 “ of all impressions: I perceive the inefficacy and
 “ futility

“ futility of all my labour, and lament the narrow
 “ and contracted state of my knowledge; for,
 “ after the accumulated industry and experience
 “ of upwards of two thousand years, we are yet
 “ only acquainted with the outlines of a great
 “ system; and dare hardly give the name of
 “ science to that which has no fixed or determi-
 “ nate principles; but which rests so much on the
 “ feeble basis of conjecture. In many instances
 “ we may inspire our patient with hope, but can-
 “ not cure his disease; we can only remain silent
 “ spectators of a fatal catastrophe, and deplore the
 “ inefficacy of the medical art.

“ *Oiseau, August 16th, 1801.* ROBERT ALLAN,
 “ Surgeon.”

This accomplished Nobleman died at Bristol soon after, in the 26th year of his age.

“ In a case of phthisis which occurred on board;
 “ I made trial of tinct. digitalis. I commenced
 “ giving it in doses of five drops, four times
 “ a day, and increased it gradually to the extent
 “ of twenty-five drops each dose; which was as
 “ much as the patient could safely take. It was
 “ then continued in such doses, and such intervals,
 “ as to keep the system under its influence for a
 “ month.

“ During the exhibition of this medicine, the
 “ cough and night-sweats continued unabated: for
 “ the first fortnight the pulse was reduced from 130
 “ to 94 in the minute, and the expectoration was
 “ considerably diminished; but latterly both the
 “ pulse and expectoration returned to their former
 “ standard, and I sent the patient on shore.

“ *La Nymphé, Nov. 1801.* WILLIAM GRAY,
 “ Surgeon.”

See

See Mr. Fleming's case of phthisis, among the extracts from his journal.

The use of flannel next the skin has become a very general practice in phthisis; and the moment any person is phthisically disposed he is immediately recommended to wrap himself in this kind of clothing. But this custom is certainly to be followed with some qualification. To preserve the body in a grateful and equal temperature must be very desirable in this disease; but it never could be intended to keep flannel so long in contact with the human body without shifting, as we daily see done. Those who wear it sleep with it on, and must very soon become offensive. It therefore ought never to be continued beyond a single night without a change; otherwise the body will be confined as it were in a bath of impure air, that ought to be exhaled instead of being accumulated. Very frequent ablution of the whole surface should be regularly attended to during the use of flannel.

But if the weakly and valetudinary have safely indulged in this practice, it never was meant that the young and healthy should have recourse to such effeminate modes of clothing. The custom, however, has become so general, that we are in danger of losing the hardihood and vigour of our national character from its use. Flannel and fleecy hosiery are to be found under the shirt, among half of the young men of the age, whose habits of changing them are not more delicate than others I have mentioned.

After being much weakened by West India sickness, I had recourse to flannel next the skin; but in cold weather I now find more advantage by wearing it over the shirt, and think that I have

fewer attacks of catarrh in variable weather from this, and the custom of general ablution.

Although I was at one time a great advocate for flannel next the skin, I am now rather disposed to prefer wearing it over the linen, and to recommend daily ablution of the whole body, to inure it to the weather.

The following case is interesting, whether we consider the digitalis as suspending the disease, or the singular cause of its production.

*Case of Pthkisis from swallowing a Plum-b-stone, by
Mr. WEST, Surgeon of Sick and Hurt.*

(Communicated by Mr. CARRUTHERS.)

“ Master William Oke, the son of an eminent
“ and respectable merchant in this place, was
“ brought from school, and placed under my care,
“ about the middle of October 1800. From his
“ own relation, I found he had been attacked
“ about three weeks prior to this with severe
“ rigour, succeeded by febrile symptoms; hard
“ dry cough, a sense of uneasiness about the chest,
“ and a general efflorescence over the whole body.
“ When I first saw him, he had a pulse of 120,
“ with febrile exacerbations, profuse night-sweat-
“ ing, and a heavy expectoration of matter, so
“ purulent as to emit a disagreeable foetor; cough
“ almost incessant, with considerable dyspnœa.
“ With so many concurring testimonies, I did
“ not hesitate to pronounce, that the disease had
“ passed its incipient stage, and was assuming a
“ very formidable appearance. A blister was ap-
“ plied to the chest, the bowels loosened, and the
“ saturated

“ saturated tincture of digitalis prepared, agreeable
“ to Dr. *Maclean*’s prescription, was entered on
“ immediately. He began with eight drops twice
“ a day, increasing the dose gradually every day,
“ until sixty drops were taken in the course of 24
“ hours; at times a slight nausea, with vertigo,
“ would supervene, and oblige me to omit it
“ wholly for some-days, and then go back to the
“ original dose; the pulse, after the first few days,
“ came down to 70; the expectoration (after a
“ few weeks) lessened every day, and once, as far
“ as respects its purulence, totally disappeared;
“ his night-sweating was considerably diminished,
“ and his febrile exacerbations were gone. How-
“ ever, with all these favourable circumstances,
“ and notwithstanding his steady perseverance in
“ this most powerful remedy, the cough occasion-
“ ally returned, and the expectorated matter as-
“ sumed its former colour. I did not hesitate now
“ to pronounce the case a hopeless one; at the
“ same time urged the necessity of continuing the
“ digitalis unremittingly. It was pushed on to its
“ full dose of twenty drops twice a day until the
“ middle of August 1801, when he was attacked
“ with violent vomiting and threw up a plumb-
“ stone, which he recollected to have swallowed
“ some time prior to his being taken ill, and
“ which stuck in the œsophagus, and was pushed
“ down with the probang, by a surgeon of the
“ place. From this moment a considerable dimi-
“ nution of the symptoms took place, and in the
“ course of three weeks the whole of his com-
“ plaints were gone.

“ Quere. Would not this patient have fallen a vic-
“ tim to what in this case must be termed sympathe-
“ tic consumption, if the digitalis had not rendered
“ stationary the most prominent features of the
“ disease?”

MEDICINA NAUTICA.

SPASMODIC AFFECTIONS, &c.

I CANNOT bring the present article under any generic term; but various spasmodic affections, chiefly of the alimentary canal, arising from different causes, and often attended with low spirits, having occupied much of our practice during the war, and as it is a new subject in nautical medicine, unfolding such peculiarities in the constitution of officers and seamen, that it would be unpardonable to pass it by.

That a body of men, by education and habit accustomed to adventure, braving danger in every hideous form, and surpassing hardship, famine, and fatigue in every shape, (the very relation of which appals the puny imagination of timid minds, enfeebled by luxury and delicacy in the fashionable or retired walks of life,) should be subject to complaints more nearly allied to the tender female than the robust masculine constitution, would appear a paradox, did not daily experience confirm the fact. The great and the little are blended in the motions of health and disease, in our physical as in our moral frame: The hero and the infant here unite: The athletic

athletic male and the hysteric woman ; for we have often seen their complaints so much alike, that no distinction could be drawn between them. The body cannot be always employed in manly toils or active exercise ; it must sometimes relax. The mind is incapable of being always occupied in sublime or serious studies ; it must occasionally unbend itself, descend to the common levels of life, grow gay amidst trifles, *dulce est desipere in loco*, that it may resume its pursuits with renovated vigor. Diseases thus undergo similar variations ; they ascend by increased incitement to inflammatory diathesis, and they descend by subduction of stimuli to extreme debility.

Homer, who knew the human mind and character as well as any modern philosopher, employs his hero with music on quitting the field of battle, which was, perhaps, nothing more than some trifling love-sonnet in praise of Brisëis. The tears of Alexander might be a nervous feeling like the hysteric paroxysm after a last night's debauch ; and Xerxes, weeping at the thought that so many thousands of his huge army must all die in so short a space, was probably gasping with the *globus* in his throat. The British naval hero, not inferior to Greek or Persian name, may therefore be allowed to exemplify the same extremes of the great and the little, in his composition, in his pleasures, his passions, and diseases.

The naval character must be delineated and studied throughout in all its shades and gradations, in health and in sickness, in order to arrive at a perfect plan of prevention, or to prescribe with decision a successful method of cure in its diseases.

Nervous feelings, nervous affections, or weak nerves, though scarcely to be resolved into technical language, or reduced to a generic definition,
are

are, in the present day, terms much employed by medical people, as well as patients, because the expression is known to comprehend what cannot be so well explained. An inaptitude to muscular action, or some pain in exerting it; an irksomeness or dislike to attend to business or the common affairs of life; a selfish desire of engrossing the sympathy and attention of others to the narration of their own sufferings, with fickleness and unsteadiness of temper, even to irascibility, and accompanied more or less with dyspeptic symptoms, are the leading characteristics of nervous disorders, to be in general referred to debility, increased sensibility, or torpor of the alimentary canal.

The history of the disease itself comprehends the symptoms, and often assumes the form of almost every other. This Protean form alarms the patient, and excites a thousand imaginary fears. Pains, stitches, or cramps of the muscular parts; contractions of the joints; spasm and paralysis of the sphincters, from whence obstinate suppressions of urine, and retention of the fæces; distortion of the countenance and eyes; twinkling of the eyelids; inability to close the eyelids; at other times, when shut, unable to open them; pupil of the eye dilated and insensible, sometimes contracted, and the iris extremely irritable; profusion of tears; dimness of sight; double vision; hearing acute, or the contrary; the external ear cold to the touch; *bombi* or *tinnitus aurium*; smell deficient; *hemicrania*; vertigo; coldness of the occiput; general chilliness, alternated with flushing; coldness of the feet; cold sweat on the palms of the hands; shivering; sense of creeping on the skin; red spots, or eruptions of the skin, alternating with dyspeptic feelings; bad taste in the mouth; excessive thirst; foul tongue; difficult deglutition; *hydrophobia*; nausea; eructations from
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the stomach; pain and distention of the stomach; heartburn; *borborrygmi*; gripes; sudden dejections; diarrhœa, but more frequently costiveness; *globus hystericus*; a sense of *vacuum* about the region of the stomach, as if disembowelled; pains about the liver, ascending to the shoulder, as in hepatitis; jaundice; pains about the region of the kidneys, and descending to the ureters and neck of the bladder and glans penis; strangury; urine crude, pale, or high coloured, at one time voided in great quantity, at another time scarce; appetite irregular, at one while voracious, and at another deficient; desire for uncommon kinds of food; sickness at the sight of particular objects and persons; worms; sighing; moaning; sudden laughter and crying; permanent hiccup; cough; sometimes resembling pertussis; sneezing; panting; breathing short and laborious; dyspnœa from particular effluvia; spitting; pervigilium, sometimes for weeks together; sleep disturbed by fearful dreams; *incubus*; palpitation of the heart; uncommon sensibility to arterial pulsation, particularly of the aorta, expressed by saying that they have pulses every where; pulse irregular and intermittent; tremours; convulsions; &c.

Vomiting, and sometimes purging of bilious matter, or temporary cholera, have given to this complaint the term *bilious* so often used by dyspeptic people. Thus people call themselves bilious, are apt to get into long narrations of what generates bile, and what is best to remove it when overabundant. Inverted motions of the duodenum and pylorus probably force the bile into the stomach, and thus create pain, nausea, and vomiting. The liver, in this disease, is, however, very frequently affected; the bile is at one time in great quantity, and at other times, not only scarce, but probably also deficient in acrimony and viscid in consistence; which

which may occasion costiveness, as its increased acrimony may excite diarrhœa.

The state of mind which attends this condition of body is difficult to be described: if it pursues any particular train of thought, it is chiefly to the patient's unpleasant feelings, and seems suspicious and jealous of every attempt to change the subject. He, therefore, takes a particular delight in recounting his ailments, attaches himself to those who listen to him with patience, and accuses others of want of sympathy; hence the temper is soured with trifles, becomes fretful, irritable, and passionate. This gloomy turn of mind often assumes a temporary derangement of intellect, and not only forgets all its old attachments, but shews the utmost signs of dislike to those who had been most dear. Contradiction in conversation, disappointment of any thing wished for, jealousy, and other passions, are apt to bring on strong paroxysms of this disease.

Mr. Farquhar, surgeon of The Captain, mentions a very strong case of jealousy that happened in that ship, and in a very respectable seaman rather advanced in life. He had at times been observed to have frequent hysteric fits, in every symptom resembling those of women; and they were evidently excited by jealousy. His wife was young and remarkably handsome; and these fits were often caused by other men paying her attention. Dejection of spirits commonly succeeded the paroxysm.

There is perhaps no affection that attends our frail state of existence that harrows the human soul with such tortures, as this excess of nervous sensibility. They may be justly compared to the torments of the damned. That species of it, where imagination paints to the patient legions of blue devils hovering around him, as if to convey him to Tartarus, is a most horrid and lamentable

mentable instance of mental delusion. The strongest of the kind I ever saw, was in a young man of the Roman catholic persuasion, from a habit of hard drinking. The countenance exhibited the signs of what was passing within, in the most frightful expressions of horror, whenever the paroxysms recurred. The priest was usually sent for; confession and absolution were the consoling opiates to this wretched inebriate; and the cloven-footed troop took their departure on being rebuked by the apostle of the church.

Such are the symptoms and feelings of nervous affections, attended with more or less of dyspepsia.

There is a something in the atmosphere of a ship, perhaps deficiency of oxygene, and the local confinement on board, that, to particular persons, are a never failing cause of vapours and dyspeptic feelings. The motions and actions of the stomach and intestinal canal are retarded and become irregular, and habitual costiveness at sea is common in many constitutions. I do not think that this depends so much on the sea diet as has been generally imagined. The situation itself affords less variety than most other conditions of life; day after day you go through the same kind of routine, the same objects are presented to the eyes, the same smells to the nose, and the same sounds to the organs of hearing. As all stimuli lose their effect by repetition, and as a peculiar train of ideas so naturally follows external impressions on the organs of sense, that condition of mind is generated which is usually styled nervous. But the effect appears to fall chiefly by sympathy or association on the stomach and bowels. This complaint, therefore, belongs with more propriety to the catalogue of the sea diseases than has been either suspected or believed; and, if we may judge from the multitude of cases which have come under

under our observation, it ought to be considered as a very common one. I have seen in a sick-berth, at one time, no less than five or six strongly marked instances of violent hysteria. Long cruizes in bad weather, joined to severe and irksome duty in the foggy and variable climate of the channel, will, at all times, produce these complaints; such is the duty of a blockade. On the contrary, I believe the disease is little known in the southern latitudes, for I have seen both officers and surgeons prefer a West India station, solely with a view to escape it, which they could not do in the home cruizes.*

What may be called the gouty constitution, and an hereditary disposition to the disease, will pave the way for its frequent recurrence on board; but there are other causes, which, by debilitating the general

* When Earl St. Vincent assumed the command of the fleet in the channel, many changes took place, both in the internal discipline of the ships, as well as in the general manœuvres of the whole. This illustrious officer, during the disorders of the navy, 1797, had made himself a terror to evil doers. By promptitude and decision peculiar to himself, he subdued the hydra in embryo, quelled the licentious spirit that elsewhere brought Great Britain and her navy to the verge of the grave, and, by equal intrepidity, address, and example, restored order and obedience to his squadron. While his talents in naval tactics shall employ the historian, this part of his character will not be forgot. The appearance of his flag in the channel, while it infused energy and activity into every department of service, had also a most sensible effect upon men of particular descriptions; for, independent of long cruizes and severe duty, complaints strictly *nervous* became more prevalent; they also disappeared, in a great degree, at his departure. There are certainly men who might feel those commotions of sensation which lead to nervous and stomach complaints on such an occasion as this; as they might be led to remember those dreadful examples which justice required during a system of terror. In my second volume are made some remarks on the state of the people on board the hospital ship at the time of the disorder of the fleet, and they exactly resembled what now appeared among many of the seamen.

habit,

habit, and particularly the stomach and intestines, that lay the foundation for the most painful and obstinate nervous symptoms.

When a patient of this kind has been presented to me, more than half his history could be read in his countenance. Some of these have been not a little surprised at the facility with which I got into their private concerns; and they supposed that I must have had some previous acquaintance with their situation in life: but no divination was required; it unravelled itself. I have met cases from disappointments in the tender passion, that could scarcely be expected to exist among such people as English seamen.

The fevers and fluxes of tropical countries often effect predisposition to this malady. Some years ago I experienced the truth of this remark after a fever at Jamaica. Such was the state of my senses, that I scarcely thought I slept a single hour in the night during the whole passage home. I was much troubled with palpitation, fainting, and vertigo: My pulse was usually upwards of 120. It was twelve months before these affections disappeared. Few Europeans have lived long in the East or West Indies but feel more or less of dyspepsia or weak nerves when they return to their own country. This may be, in a great measure, owing to living on high-seasoned food, so common in both Indies, but there is probably also a gradual disposition induced from the excessive heat of the climate. The sexual appetite is stronger in a warm than in a cold region; as are all other passions of the exciting kind, but which, too often indulged to excess, indirectly debilitate, and generate mobility of the nervous system.

In the West Indies, nothing appeared to me so unnatural and preposterous as the quantity of spice,
10 particularly

particularly the hottest pepper, which is used in soups, and other dishes. It is usual for Europeans, when challenged on these occasions, to quote the good effects they have on the slaves and natives. But it ought to be observed, that their food is chiefly vegetables, and deficient in stimulus. Animal broths, and solid beef or mutton, or poultry, can need no such excitors in a healthy stomach. Hence a great degree of torpor and languor succeeds before the next repast, and, to give the dish its usual relish, the high seasoning is continued, till the use of pepper is confirmed into a habit that cannot be overcome. It will be particularly felt on returning to a cold climate, where the body loses an immense degree of excitement from the diminished external heat; and thus the stomach suffers from sympathy in consequence of that. The variable atmosphere of our island ought also to be taken into the account. The haughty spirit of the planter may likewise feel some chagrin on the transition of manners in society, when he is no longer surrounded by the obsequious compliance of the enslaved and degraded Africans.

But perhaps the most fruitful source of nervous diseases is hard drinking, particularly of spirits. This depraved custom is, alas! too common in a sea life. The stomach, as it first receives, so it first feels, the baleful influence of this destructive stimulus. Its sensibility is preternaturally increased till it is worn out; the fibres are contracted and indurated; the glands which secrete mucus and gastric juice are, from excessive action, soon obliterated, and nothing but an uncommon quantity of the spirit can at last convey to the extinguished nervous energy that degree of excitement which affords pleasing sensations to the shattered frame of the inebriate. This highly sensible organ, from its sympathy with
every

every other part, is thus debilitated, and communicates with the whole nervous system. Dyspeptic affections and liver complaints appear first, and to which quickly succeed the horrid train of hypochondriacal and nervous disorders, till nature, exhausted and worn down, yields to palsy, dropsy, &c. I think the use of tobacco, so very common among seamen, also tends to induce similar diseases.

Mercurial courses for the cure of syphilis are often the cause of permanent nervous affections. Mercury, in its different forms, is often, from the fault of the medical prescriber as well as the patient, injudiciously administered. But the employment of the naval officer and sailor is peculiarly unfavourable to conduct a long mercurial regimen, whether from lodging, climate, or weather. They are both apt to conceal their complaints in the early stage, and, if in the end they fall into ignorant hands, a lost constitution is too often the consequence. In some habits strongly charged with mercury, I have witnessed extraordinary hysterical and epileptic paroxysms. But a common course of mercury, however judiciously managed, disposes to nervous weakness. As soon as it affects the body, some degree of fever is produced, anxiety, restlessness, want of appetite, headach, and irritability of mind. The necessity of carrying the practice still farther, and exhibiting fresh quantities of the medicine at intervals to subdue an inveterate disease, favour the recurrence and continuance of nervous mobility, which, if it can be overcome at last, requires a long time. I have known some melancholy cases of nervous disease occasioned by mercury administered with very little discernment in what was supposed to be hepatitis, from a pain extending from the region of the liver upwards to the shoulder: but, from other symptoms, it was plain that the disease was more nearly allied

allied to dyspepsia, and the patient got relief by a different mode of treatment. It is thus that weakness of stomach, and all the painful complaints which flow from that, are often laid in infancy and childhood, from the too common custom of purging children, and giving mercurial medicines as a vermifuge. These, with tea drinking when very young, joined to a sedentary life, seem to lay the foundation for the ruin of health in the delicate female constitution in this country. The enormous quantity of calomel lately prescribed by some physicians in the yellow fever, will probably prove a similar source of disease to those who may chance to survive this unaccountable practice.

Great cautions in all constitutions are required for the safe administration of mercury, but particularly in those who have weak viscera, or inclined to bad digestion. Hence the method of inunction is preferred, as the body by this way can be saturated without the intervention of the bowels. Yet, in some people, even this form has a hurtful tendency, and is occasionally, from exposure to cold and damp weather, thrown upon the intestines. The *modus operandi* of mercury is not well understood, but it must always be best to trust to the milder preparations. *Hydrargyrus muriatus* is still used by some, but I have so often witnessed its bad effects, with all the care that could be taken, that I never think of employing it. This form, as being easily disguised, is supposed to be the basis of the quack medicines; while others, perhaps more from a spirit of quackery than any thing else, give it in pills, at the same time asserting, that, if the patient has not contracted the venereal disease himself, he has received it from his parents. Some shocking histories of this kind are to be met with in naval service, with which our pages cannot be bloated.

Such

Such do we suppose to be the most frequent cause of low spirits, hypochondriacal and dyspeptic affections, as exemplified in ships.

An original temperament of body, such as what have been called *sanguineous* and *melancholic*, may give reason for distinction in some of the characteristics of the affections which are the subject of this section, and may also occasion variety of treatment. Thus the sanguineous habit has a stomach and bowels more irritable and easily affected with slight causes: whereas the melancholic temperament exhibits much torpor and immobility of the nervous system. But the diseases being chiefly seated in the alimentary canal; in a practical work like this, I do not find it necessary to pursue the distinction farther.

The *cure* must depend much on a knowledge of the causes which have induced the disease, so as carefully to avoid them; but, when it has continued for any length of time, it is too often impracticable. Who can cure habitual drunkenness? Or what medicine can repair a constitution shattered by mercurial courses?

It is the fate of war, that numbers of seamen are brought into the naval service against their inclinations; many of those under circumstances singularly severe; as happen to men that are impressed immediately on coming from foreign voyages, without even hearing of their relations, far less having a sight of their families. Nostalgia, which I take to be only a variety of hypochondriasis, is sometimes strongly marked in these cases, and emphatically speaks the language of human nature. How disgraceful is this practice to a nation that calls itself the most free on the face of the earth, that deprives of the privilege of citizenship those men to whom it owes its security, and to whose

valour the sound of applause has been constantly heard! But it seems that only empty praises are returned for the first of all sacrifices, a surrender of their liberty. The present war has given birth to much warmth in the discussion of political subjects. But what authority can justify the involuntary service of any particular class of men? African slavery has been discussed among us; but, though Christianity is the national religion, there seems so little of the spirit of it in the country, that the slave-trade still continues, and ought to continue, if there is no remedy against impressing seamen.

Low spirits and stomach complaints, as arising from mental affliction, are often to be traced to the particular situation of the patient. In such cases we have only to lament the inefficacy of our art. Articles of *materia medica* have small effect on that part of the human frame that is worn down with anguish of mind and tortured with corroding cares.

Canst thou not minister to a mind diseas'd,
Pluck from the memory a rooted sorrow,
Rase out the written troubles of the brain,
And with some sweet oblivious antidote,
Cleanse the foul bosom of that perilous stuff
Which weighs upon the heart?

SHAKSPEARE..

However desirous a physician may be to sympathize with the feelings of his patient, in public service he is apt to desert his duty if he yields to their impulse; for, in this disease beyond all others, the first step to a cure ought to be change of situation. Much, no doubt, may be done by advice and gentle treatment, by encouraging him with the hopes of a speedy recovery, and the return of peace. I have seen much relief obtained by changing the sleeping place from the cock-pit to the upper deck, or from between decks to some better ventilated situation.

tion. Surgeons' mates, whose education has added to refinement of feeling, often embittered, perhaps, with the neglect which naval service imposes on their corps, are very frequently affected with low spirits. We also, on many occasions, meet with young officers, as well as old ones, of all descriptions, whose sensibility has long smarted under unmerited disappointment of honours in the line of their profession. Can any misfortune in life be more galling to a brave man, conscious of his right to promotion, than to see another preferred before him, without even a single pretension? Disappointments of this nature have brought many worthy officers to an early grave, and induced afflictions of body and mind that nothing beside could have produced. Ye rulers of the earth! Ye dispensers of honours! whom high heaven has deputed to do justice here below, remember that there is another world, where all your favours will undergo a scrutiny, and be tried as in a balance!

In the year 1800, I met with a curious case of spasmodic affection in a young officer of great merit. Being descended of gouty parents, I suspected a strong predisposition to the disease depended on that habit of body. He had various dyspeptic symptoms, but the most painful complaint was the total loss of voice. Nothing could surpass his laboured articulation, and the throes he made as he attempted to speak. He was relieved by the fetid gums, and exercise on horseback as much as he could bear, when the weather was at all tolerable. This gentleman had been tantalized by hopes of promotion for a length of time, but possessed too fine a feeling, and too delicate notions of honour, to remain insensible of neglect.

I wonder much if ever our medical brethren of the army meet with such diseases from similar causes,

where the heavy purse so often supplants merit in the purchase of commissions; a practice that has heretofore made our army a taunt and a proverb among the nations!

When ships return to port, as the best mode of gestation, I generally recommend riding on horseback to officers. This, besides the exercise and motion which it affords, presents a variety of images to the mind, which cannot fail to introduce a new train of ideas, and thus re-act on the body, but particularly on the stomach and intestines. This seldom fails to do good; and, if the ship is allowed to remain a fortnight in port during clear weather, a cure is obtained without much medicine. Exercise on horseback, as being so opposite to any kind of muscular action or amusement that can be obtained on board, is, to the sea-officer, by far the most salutary. After he is thus refreshed and recruited, both body and mind return to sea-duty with an energy of the nervous system that qualifies for another cruize, and thus preserves the spirit of enterprize.

But in all situations of life, on shore or on board, a change of scene is uniformly beneficial to low spirits, and to all dyspeptic patients. The variety of objects which are continually presenting themselves, force attention from a desponding mind, and gradually introduce new feelings that entirely supplant the former, so as to prevent their recurrence.

The naval hospitals are very little to be preferred to a ship in the treatment of this disease. They afford no amusement to seamen, and the great pleasure in coming on shore is to make the best use of their cunning to be put down on the list of invalids. All energy of mind is lost within these walls, and must be, till some means are devised by officers of address and intelligence to shake off that languor
and

and indolence which we observe so general in the wards. A ship under fine regulations of command, where much etiquette is required in performing duty, that keeps the seamen in a constant state of alertness and activity, is above all other means at sea the best calculated to prevent those diseases which arise from depressing passions, and those in particular of which we are now treating.

When the scurvy begins to appear in some constitutions, timidity and despondency, in the form of the hypochondriacal affection, are common symptoms. Discernment is therefore required to distinguish between the diseases. Scurvy is not attended with any dyspeptic feelings, and is chiefly to be known by the diet which the patient has been living on some time before. The cures of scurvy and dyspepsia with low spirits, are in direct opposition to one another, and it is of consequence in the practice to be duly informed.*

In patients who may be called constitutionally dyspeptic, or naturally subject to indigestion from a weak stomach, their complaints are commonly induced by irregularities in diet and affections of the mind. Such persons, on slight occasions, are liable to gastrodynia, heartburn, flatulency, &c. from particular kinds of food, such as ill-fermented bread, vegetables, fruit, malt liquor, and weak sharp wines; these symptoms are also frequently induced by mental inquietudes, and whatever ruffles the temper. A certain sallowness of countenance is sufficient to indicate the dyspeptic habit, and, from the different shades of colour, the less or more aggravated attacks of the complaint. A more than

* The lemonade lately made a part of sea-diet has also contributed to the production of dyspepsia in many persons predisposed to that complaint.

usual quantity of bile taken into the circulation would seem to give this hue to the complexion, as the *tunica adnata* is yellow as well as the skin. This suffusion of bile is probably owing to that fluid being retarded in the ducts which convey it to the gall-bladder and duodenum, whether from obstruction or spasmodic affections of these; by which cause it is absorbed and carried into the blood. This also occasions costiveness, the peristaltic motions of the intestines not being sufficiently accelerated by the stimulus of the bile. The irregular and inverted action of the intestines often forces the bile into the stomach, which excites nausea and vomiting; and thus the term bilious complaint, so common in the mouths of people of this temperament.

A singular irritability appears to reside in the dyspeptic habit, which subjects many to a miserable state of existence. When it so happens with an officer, those beneath him too often feel the effects of a capricious temper and unmerited resentment. Such officers, in their cool moments, would do well to guard and prepare against every thing in giving command that is apt to ruffle their dispositions, as the feuds and animosities which it produces often lead to reproachable consequences that degrade public service.

The treatment of habitual dyspepsia is often a difficult matter; many of these patients are accustomed to modes of living that are inconsistent with a regimen of health. We too often observe them indulge in the most luxurious and high-seasoned food; common fare, they tell us, is too cold, too weak for their stomachs; they must drink spirits after meals, must eat Cayenne pepper with their fish, and have their soups and puddings spiced with the strongest aromatics. Such people are always languid, inactive, and in a state of

ennui

ennui till dinner-time ; when the more powerful stimuli of food and wine bring forth their agreeable sensations. These are the patients in this age devoted to gluttony and sloth, who devour the enormous quantity of spirituous tinctures that are daily sold in the shops of our druggists and apothecaries. Hence the use of raw spirits, and all the horrors which follow solitary dram-drinking !

Great caution is required in the use of emetics, in stomach complaints, or what are vulgarly called bilious attacks. The condition of the stomach is rather to be corrected than evacuated. If, however, the nausea is great, a few grains of pulv. ipecac. will suffice ; or a weak infusion of chamomile ; always avoiding tartarized antimony, which, in stomachs very weak or sensible, is often attended with painful consequences. It ought, however, to be remembered, that the strongest emetics are often necessary in the torpid melancholic temperament ; as the disease in such habits seems to depend much on the vitiated and stagnating contents of the stomach, intestines, and biliary ducts, which are thus to be excited and evacuated. Should the vomiting be followed with no relief downwards, some aperient medicine must be given. Here much is to be left to the choice of the patient ; for he will be commonly found to have some favourite purge, which he takes when necessary. This is a common practice with dyspeptics ; and they are in general the greatest favourers of quack medicines so prevalent in this country, which so much disgrace our national character. Aloes, in the form of pills, have been said to be the most eligible purge in habitual costiveness : but as it is commonly proper to join some article to correct acidity, rhubarb, or jalap, with calcined magnesia, natron, or kali, are preferable. All mercurial preparations

preparations I conceive to be hurtful in irritable constitutions, though sometimes preferred from being quick in operating. The bowels being thus cleared, must be preserved regular; of this we are reminded enough by the patient, who conceits odd things from the condition of this discharge.

Medicines which invigorate the stomach may be now tried; such as bark, columba, quassia, and such like. Much attention is required in the exhibition of these articles, as well from the delicate state of the stomach, as from the fickleness of the patient. If he has been accustomed to spirituous tinctures, or strong wines, it will be a difficult task to overcome his dislike to medicines that do not afford that glow and warmth which he has felt from the others. But reason ought to be employed where physic fails; and the patient ought to be warned against the most pernicious of all habits. As acidity is a constant attendant of indigestion, calcined magnesia, lime-water, natron, prepared kali, or even the water of pure kali, ought to be used, either by themselves or joined with the former articles. Small doses of the bitters ought to be given at first, and they ought never to be continued longer than ten or twelve days at a time. After a week's interval they may be resorted to again, accompanied with some form of chalybeate; which, as it may be found to do good, may be persisted in, and the bitter left off entirely.

The warm gums, as they are called, are very commonly employed in these complaints: asafoetida has been deservedly preferred; they gently stimulate the bowels, and have the best effect in relieving flatulency and distention of the intestines, that are equally painful and disagreeable. Vitriolic æther is also of great benefit in cramps and spasms
that

that attend such affections; and I have generally found it do more service than opium, the use of which, in dyspeptic stomachs, has long appeared to me hurtful, and apt to produce convulsions.

When steel is resorted to, which of all medicines promises the most permanent relief, it ought to be preceded by clearing the bowels, and a few days use of some gentle bitter, valerian, &c. I prefer the limature, or rubigo ferri, beginning with very small doses, and increasing them very gradually, so as never to endanger any uneasiness of stomach, otherwise it may be left off; and no argument will persuade to a new trial. A small pill may be washed over with Skeete's infusion of bark*, which is the best suited to delicate stomachs of any that I am acquainted with. Lime-water will also answer this purpose, or even common water, into which may be put a few drops of the water of pure kali, having always a view to correct the acidity, which is so apt to excite many troublesome symptoms.

The food ought to be adapted to the peculiar condition of the stomach, to eat often and little at a time; the meat ought to be under-done; malt-liquors and vegetables and fruit cautiously used; meat-suppers may be indulged in; the stomach is apt to sicken when empty. With delicate ladies I have often recommended a thin slice of tongue, ham, or salted beef, immediately on waking, as the best preventive of morning nausea. In cases of obstinate habitual costiveness, great advantage may be derived from the patient living

* This elegant form of exhibiting cinchona, is made by triturating magnesia with bark, which facilitates the solution of the resinous part, so as to render it strong of the medicine, and at the same time giving a fine red tincture. — See SKEETE'S Experiments with Bark.

much on animal broths, and avoiding solid flesh-meats, and especially bread. These broths, or soups, very much lessen the bulk of the intestinal mass, when the more fluid part has been taken up by the lacteals: hence the peristaltic motion goes on more regularly; and distention and pain, from flatus being accumulated in particular portions of the intestines, are in a great measure prevented. Such people would seem to require a larger proportion of liquid aliment than others: for, whether from the food being retarded by a weakness of muscular fibre in the bowels, or from greater energy in the absorbent system, the *foecal* contents certainly become more dry and lumpy, and descend with difficulty; and thus excite those singular commotions and irregular sensations, which disturb and harass the whole nervous system. Our opinion of gestation and exercise is given at sufficient length above.

To persons debilitated in stomach and bowels by severe courses of mercury, a regular and temperate life can alone give relief; if from the shattered remains of a constitution they wish to regain health: in other respects the general method of cure delivered above applies also here.

Flannel worn next the skin has been cried up by many, in the treatment of stomach complaints, from the sympathy that is said to exist between that organ and the skin. I think better effects are to be derived from daily ablution of the surface of the body. The one practice is to soften the skin and render it too delicate; whereas the other tends to fortify it against the rigours and changes of season, and by preserving it pure and pervious, promotes the cutaneous discharge. Those who wish to try this practice of washing the whole body every morning with resolution and perseverance, will soon

soon find reasons to make them continue it for life.

Moderate exercise in the open air, when the weather will permit, should be forced upon the patient, if he is little inclined to it himself; for there is a great necessity of rousing the body as well as the mind to exertion. It is remarkable how indifferent some persons in this disease are, to every thing that is passing round them; they must even be forced to take food, or be in danger of perishing with want.

The following case, with which Mr. M'Cormick of the *Immortalité* has obliged me, is an example of many that have come under my observation. Mr. M'Cormick, not without reason, thought it nearly allied to that complaint, which some physicians have called *angina pectoris*. The description, as given to me, before seeing the man, by this intelligent surgeon satisfied me that it partook of the *hypochondriasis Marina*, or *Nostalgia Nautica*, common in the fleet. The first sight of the patient convinced me. I began with my usual queries of his private history, in a way that made him communicative. Something lay heavy on his spirits: the world had gone against him, and forced him from home; his father was dead since, and his mother not only afflicted but in great want. This was the string on which hung all his woes. He spoke gratefully of Mr. M'Cormick's humanity: I assured him he should go to the hospital, and that he should be invalided and go home; and that he might even write immediately and tell his mother so. He brightened up so far as to say, that he believed
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he could get employment now in Dublin, as the times were mending in that country. A subsequent letter from Mr. M'Cormick informed me, "that since his going to the hospital he has recovered amazingly; although, I believe, wholly unaided by medicine; this I think perfectly confirms your opinion of its being hypochondriasis."

"Edward M'Guirk, aged about twenty-two, tall and able bodied, but rather thin than otherwise, bred a carpenter, compelled by want of employment to go to sea, this his first cruize. Complained, on the second of August 1800, of frequent cold chills, slight nausea, pain in his limbs, frequent and copious perspiration, pulse very frequent, although pretty full and regular. Conceiving his complaint to be a slight febrile affection, occasioned by irregularity, he had repeated doses of antimonial medicines, so as to produce full vomiting; and at night an opiate was added. August the third, general pain much relieved, complains of pain the whole extent of the right arm, and of want of power in the thumb, which is bent in towards the palm, but fixed there by no rigidity; says that for several weeks he has, at intervals, had a contraction in the flexor muscles of this arm. Frequent severe fits of palpitation, especially at night, attended with a sense of suffocation, which compel him to quit his bed; finds ease in a sitting posture, inclined forwards; pulse very frequent, bowels loose, appetite good. 6th. Numbered his pulse, and found it 150; distinct and moderately full. 7th. Pulse 140; started

“ started twice out of his sleep, to remove a pres-
“ sure on his breast. Urine in small quantity,
“ great thirst, copious and constant perspiration.

“ 8th. Pulse 160. Usually two or three at-
“ tacks of palpitation in the day-time, at irregu-
“ lar intervals; at night they are very frequent.

“ 9th. Respiration not permanently affected, nor
“ in any manner during the daily paroxysms.

“ 10th. Pulse 140. 14th. Pulse 150; smaller
“ and more irregular than heretofore. Thirst,
“ scarcity of urine, and copious perspirations
“ continue. Has hitherto taken no medicine
“ that could affect the circulation; this day
“ gave him gut. v. of the saturated tincture of
“ digitalis, as prepared by Dr. Drake, in \mathfrak{z} i. of
“ the infusion of quassia, morning and evening,
“ which on the 15th was increased to gut. x. twice
“ a day; on the evening of this day pulse was
“ 120; irregular as to velocity, but stroke much
“ more distinct than for some days past.

“ 16th. Pulse 140. Discharge of urine consi-
“ derably increased.

“ 17th. Digitalis continued, and was gradually
“ increased to gut. xvij. three times a day. When
“ the dose was at this point, the pulse was usually
“ in the morning, previous to taking the tincture,
“ from 120 to 140; at noon, when the effect of
“ the morning's dose was at its height, it was be-
“ tween 70 and 80; in the evening it returned to
“ its usual velocity; urine became copious, palpi-
“ tations much less frequent, but not less severe
“ when they did occur; sleep more composed.

“ September 3d. About this time the pulse
“ became very irregular in velocity and force;
“ the digitalis produced vertigo and universal
“ tremor, and was seldom retained; palpitations,
“ generally one in the day-time, and two or three

“ at

“ at night; he considered himself as becoming
“ rapidly well. Having no more digitalis, I was
“ necessarily restrained to abandon its use; I then
“ gave him the bark, and ammonia, with an oc-
“ casional addition of opium or rhubarb, as the
“ state of his bowels (which became very irregu-
“ lar) required. The paroxysms became *gra-*
“ *dually* more frequent, and much more severe;
“ contraction in the arm, and (as he expressed it)
“ gnawing pain, permanent. A total inability
“ to lie on the right side, from the great sense
“ of pressure in that posture. Respiration difficult
“ when in an horizontal position, on either side.
“ Pulse continues irregular.

“ October 16th. When he attempts to sleep in
“ his hammock, an oppression and stricture across
“ his breast comes on so frequently, and with such
“ violence, that, however drowsy, he seldom dares
“ lay down; the little he does sleep, is either
“ lying on his breast, (upon which he is obliged
“ to turn himself when a paroxysm comes on,)
“ or sitting on his chest, leaning forwards on the
“ table. These attacks never come on while per-
“ fectly awake; but his rest is so imperfect as
“ scarcely to deserve the appellation sleep. Pulse
“ as frequent as at any period of his illness, very
“ weak in general, although it communicates very
“ different sensations to the finger in a minute, as
“ to force and frequency; at one time being full
“ and regular, while the next second it becomes a
“ rapid tumultuous motion rather than a distinct
“ stroke. About four o'clock (P. M.) a heat
“ (or rather a sense of heat) commences about
“ the region of the heart, and, extending itself
“ upwards, diffusing a glow over the neck and
“ face, continues until twelve, when he usually
“ perspires freely and is relieved; this sensation
“ never

“ never descends below the thorax. Feels a
 “ pricking, as it were of a pin, in the vicinity
 “ of the heart internally; it never ceases, nor
 “ does it vary its seat.

“ Oct. 26th. Palpitation never attacks him in pa-
 “ roxysms, as formerly; but when asleep, an op-
 “ pression seizes him, accompanied with a stricture
 “ across his breast, in such a manner as to make him
 “ fear instant dissolution. When he does happen
 “ to remain free from this attack, his dreams are
 “ of the most horrid kind, making the idea of
 “ sleep dreadful to him; his bowels continue
 “ irregular, as does his appetite for food. He is
 “ much less emaciated than might be expected
 “ from the length and nature of his illness; his
 “ respiration becomes hurried on the smallest ex-
 “ ertion, and he faints; his countenance is much
 “ paler than before his illness, and has in it a cer-
 “ tain expression of distress, of which it is impos-
 “ sible to convey an idea by description; his arm
 “ continues contracted, painful, and the forearm
 “ somewhat swelled; the thumb still powerless.”

The following case, by Mr. Lloyd of the Bar-
 fleur, so much resembles others which I have
 lately examined, that I do not hesitate to class it
 under spasmodic affection.

“ Charles Aiket, belonging to the Armour-
 “ er’s crew, aged thirty-seven years, a small man,
 “ was put upon the sick-list 14th February, with
 “ pain about the præcordia. Symptoms are, vio-
 “ lent pains (as he describes) about the heart; its
 “ duration does not exceed five minutes, but the
 “ attacks are frequent; his pulse intermits un-
 “ commonly from four to six strokes as quick as
 “ they could possibly be counted, then an entire
 Vol. III. C c “ cessation

“ cessation for two or three seconds. Upon mi-
“ nutely feeling the arm for a considerable length
“ of time, there was some little variation in the
“ circulation; his appearance does not indicate
“ disease; the state of his bowels regular, and no
“ loss of appetite. He says that he has been sub-
“ ject to similar attacks for six years; the last
“ was about a year and half ago. Capt. opij gr. i.
“ At seven P. M. the pulse regular, and the at-
“ tacks were not so severe. 15th, eight o'clock,
“ A. M. a recurrence of the inequality of the
“ pulse, but slept well in the night. Upon further
“ questioning him, he says that the pain is more
“ violent when stooping, but it makes no differ-
“ ence whether in a lying or erect posture. R. opij.
“ gr. fs. ter die. One o'clock, P. M. pulse regu-
“ lar, and the attacks of pain have been slighter.
“ 7. P. M. pulse continue regular, and feels as
“ well as usual. 16th. continues well, having
“ had a good night; no medicine. 17th, 18th,
“ 19th. the same. 20th. went to duty.—I am
“ apprehensive that the periodical derangement in
“ the circulation is the consequence of either a
“ polypus or aneurism near the heart.”

MEDICINA NAUTICA.

SCURVY.

THERE is no part of my medical labours that has afforded me more satisfaction, than what relates to the prevention and cure of scurvy. A case of scurvy simply, requiring to be sent to an hospital, has not come under my observation since 1795. The disease has, no doubt, appeared in numerous instances; but, the preserved lemon-juice being now a part of the surgeon's stores, and regularly supplied when demanded, the certain relief is at hand. When I contrast the present state of the Channel fleet with what it was many years ago, even in my own early days of service, there is much reason for exultation. It was no uncommon thing in those times, for a ship, during an eight weeks cruize, to bury ten or twelve men in scurvy, and land fifty at an hospital. There was an instance last war, where so many were landed at Haflar, on the fleet coming from sea, that the hospital could not contain them; they were lodged in the chapel, and in tents erected for the purpose. Such was the inveteracy of the

disease on that occasion, that many died in the boats between Spithead and the hospital; and in the hospital also many perished.

When I look over Lind's Work on Scurvy, it much astonishes me to think how he met with so many subjects for dissection. The plain truth of the matter is, his method of cure was imperfect; for a man dying of scurvy is not known in the present day. It may be justly deemed a confirmation of a successful practice, that nothing but the most unprincipled neglect will ever in future provide a scorbutic corpse for dissection.

In my former Volume, an instance is narrated of twenty men dying in scurvy on board an East-Indiaman, in the passage between India and the Cape of Good-Hope. When I think of the immense riches of that company of merchants, I am chilled with horror at reflecting on a fact that stains the commercial character with indelible disgrace.

I am afraid that occurrences of this kind are very frequent in the ships of the East-India Company: Indeed the whole trading ships of this country require correction in this point. It is the nature of Trade to render man selfish; to chill the heart and narrow the affections. A commercial nation like this ought to have a Board of Health, to protect seamen in distant voyages, so constituted under legislative authority, that the power of gold could not abridge its benevolent spirit.

Much, however, as I depend on the citric acid for the cure of scurvy, I must still assert, that the prevention ought to be trusted to esculent vegetables, if they can be procured. In the warm climates, where these fruits grow, they may be used by the seamen with equal pleasure and advantage in their native state; but it is unnatural, in
the

the winter months of our climate to give a man lemonade. This practice was introduced to the Channel fleet, in the summer of 1800: the scurvy, for the five preceding years, was little known, as the people had abundant supplies of vegetables on coming to port. But if it was determined that the ships should not remain long enough in port to consume the quantity of cabbage, onions, &c. to recruit their health, it was an easy matter to let them carry them to sea; or when at sea to send out regular supplies. This was done in the latter part of the summer of 1800; partially in the winter; but better attended to in 1801, when the supply was greater, and with it regular cargoes of bullocks sent off Brest.

From the whole of my reports from the surgeons of ships of the line, I do not find a single fact that can justify the general use of lemon-juice as lately administered. As in all former cruizes, unless the supply of vegetables was frequent and large, cases of scurvy I found still appeared that required the acid in larger quantity from the surgeons. Indeed it is pretty certain that what was called lemon-juice in the victualling-office, was only acetous acid and lemon-juice mixed. The importation of lemons to this country must have been unequal to the expenditure in the navy only. But it is also probable that if the juice was unadulterated, it had been weakened and diluted by other means.

The long cruizes, and restless mode of duty in the fleet, in 1800, joined to the use of this cold and fat-consuming beverage, had reduced the strength and vigour of body in a wonderful manner in every ship. But the better-conducted supplies of beef and vegetables, which began in May 1801, restored the emaciated people, made

them equal to all the exigences of duty, and renewed the flush of health on their cheeks. These supplies were the more desirable, as an immense proportion of the whole had been debilitated by the typhous fevers which prevailed in the winter and spring months; fevers which weaken a constitution more than almost any other disease.—It is thus apparent, how imperfect many forms of service still remain, that relate to the subject of health: nothing yet is done by system.

In my former animadversions on scurvy, I pointed out the pressing necessity for supplying all transports with every preventive to ward off the disease, with a copious allowance of lemon-juice for cure. Large armies have been embarked at different times, during the war, yet these securities against a fatal disease are still little attended to. If we observe seamen accustomed to a sea-life so liable to suffer from scurvy, how much more ought we to guard against it among raw soldiers? A party of artillery, that formed part of the army of Sir James Pultney in 1800, was in the spring encamped on an island in Quiberon Bay, where the whole must have perished, but for lemon-juice sent from the men of war. The scurvy, after this, appeared, as might have been easily foreseen, throughout the whole army; which must have retarded its operations, and run great hazard in defeating the Egyptian enterprize.

In this Volume, in Mr. Perkins's report, we observe two symptoms are mentioned, which are new to the history of scurvy; viz. leucorrhœa and strangury in the women on board *L'Uranie*. The female, as being seldom at sea, has scarcely been the subject of this disease. The lax and debilitated solid might, no doubt, account for this change in the catamenia, but when the blood
itself

itself is evidently altered in colour, from the abstraction of oxygene, which imparts the florid complexion to the vital fluid, we can the less wonder at any alteration in the uterine effusion.

Thus far the history of scurvy appears complete in what relates to the prevention and cure. But there was still a *desideratum*; some method of preserving the citric acid was wanting, that to a certainty could ensure the antiscorbutic power for any length of time, and in any climate. The juice we have seen, as preserved for the navy, cure scurvy after being two years in bottle; this is very fair: but still it is uncertain in that form for preservation, as it is liable to fermentation. Due attention, I believe, has by no means been taken to give it even the best chance for keeping in this form. No case of lemon-juice comes to the fleet where there are not a number of bottles with the pulp and rind bruised down and mixed with the liquor. This, I suppose, is done by the contractor by way of making up the quantity as cheap as he can. But this very pulp, and mucilage which it contains, are what produce the fermentation that destroys the native acid. Besides, the acid may be so diluted and weakened by the addition of pure water, so as very much to disappoint us in the cure, unless exhibited in very large quantity. When mixed with acetous acid, I believe no chemical test can decide the sophistication.

In the spring of 1800, I observed in the newspaper an advertisement by Mr. Coxwell, chemist, of Temple Bar, for a crystallized form of lemon-juice; and very soon after saw some of it in the possession of Mr. Kittoe, purser of his Majesty's ship

Centaur; and which I conjectured to be prepared according to Scheele's method. I was therefore induced to write to Mr. Coxwell, and to inform him, that if he would send me some of his salt for experiment in the cure of scurvy, I should take care to intrust it to surgeons that were capable of exhibiting the medicine so as to appreciate its powers, that he might avail himself of my authority, should it prove successful. In the meantime, the honourable R. Admiral Berkley, whose heart is always expanded to give relief to a sick sailor, had interested himself in the business, and desired Mr. Coxwell to forward to me a quantity of his preparation sufficient for trial.

This form of the citric acid was first invented by Scheele, the late celebrated Swedish chemist, and published in Crell's journals for 1784. He tried the process which he had several years before discovered for purifying the acid of tartar, and obtained the acid of lemon, pure and concentrated. Mr. Coxwell had now the credit of preparing, on the largest scale, what had hitherto been confined to the laboratory of the chemist only.

At the very time that Mr. Coxwell's parcel came into my hands, the *Superb*, of 74 guns, arrived in Cawsand bay, uncommonly affected with scurvy. The first case that I inspected seemed exactly fitted for the trial: He was, as Mr. Watherston emphatically expressed, sent by Providence for the purpose. Such an inveterate disease had not been seen in the fleet for years; the symptoms had advanced so rapidly as to approach the last stage; and, what was rather surprising, he had first sought relief only about two hours before. I shall detail the case as related in Mr. Watherston's diary, who, at my request, noted the diet, that all circumstances might

might be duly weighed in adjudging the merits of the concrete acid.

“ Case of scurvy treated by the concrete citric
“ acid. Superb, July 5th, 1800.

“ Robert Brown, aged 21, seaman, labours un-
“ der an advanced stage of scurvy, the principal
“ symptoms of which are, spongy, livid, and ul-
“ cerated gums, which bleed frequently ; contrac-
“ tions of both hams, but particularly of the right
“ one, in which there is a considerable degree of
“ rigidity, hardness, tumefaction, and livid disco-
“ loration, with a number of large blotches upon
“ the leg ; has used no medicine except *two ounces*
“ of lemon-juice.

“ Omitt. suc. lemon.

“ R. sal. concret. lemon \mathfrak{z} ff.

“ aq. com. \mathfrak{z} viij. M.

“ Sumat. \mathfrak{z} viij. hodie.

“ His diet to-day has been bargou for break-
“ fast ; salt beef and pudding for dinner ; bread,
“ butter, and cheese for supper.

“ July 6th. No bleeding from his gums since
“ yesterday ; no other alteration to be perceived.

“ \mathfrak{z} vj. of the solution to day.

“ Diet to-day ; bargou for breakfast, salt pork
“ and pease for dinner, bread and cheese for sup-
“ per.

“ July 7th. Gums more florid ; hardness and
“ tumefaction of the ham somewhat receded. Med.
“ as yesterday.

“ Diet ; bargou for breakfast, salt pork and pease
“ for dinner, bread and cheese for supper.

“ July 8th. Gums begin to assume a fine florid
“ appearance ; they have not bled since he began
“ the use of the salt, and are now beginning to ad-
“ here again to the teeth. Tumefaction in the
“ ham considerably reduced ; dark livid colour al-

“ most

“ most gone ; he appears to be in much better
 “ spirits. Med. as before.

“ Diet ; bargou for breakfast ; fresh beef and
 “ soup, with vegetables in it, for dinner ; drank
 “ some tea in the afternoon ; supper as before.

“ July 9th. Knee more flexible, and all the
 “ other symptoms continue to mend. Med. as
 “ before.

“ Diet ; breakfast and supper as usual ; fresh
 “ beef and soup for dinner.

“ July 10th. A few small ulcerated points re-
 “ main about his gums, but which are clean and of
 “ a healthy appearance. Med. u. a.

“ Diet as before.

“ July 11th. Symptoms disappearing fast. Med.
 “ u. a.

“ Diet as mentioned before.

“ July 12th. Gums in a perfectly sound state ;
 “ rigidity of ham almost gone, which is still a little
 “ thickened, but without any discoloration, pain,
 “ or even uneasiness ; has regained his usual
 “ strength, and says, that he is in as good health as
 “ ever he was in his life, and fit for his duty as a
 “ topman ; to be convinced of which, I have just
 “ seen him run to the main top-mast head. He
 “ takes his medicine for this day, and to go to his
 “ duty to-morrow.”

“ REMARKS.

“ The proportion of an ounce of the concrete
 “ salt of lemon to a pint of water, as used in this
 “ case, tastes stronger of the citric acid than the
 “ common lemon juice does ; it is much more
 “ agreeable and palatable, being without any of
 “ that musty taste which the lemon juice always
 “ acquires.

“ On arriving in Cawsand-bay, this man had no
 “ money ; and, from all his messmates being in the
 “ same

“ same state of poverty, he has been totally deprived of any assistance from fruit or vegetables, except what he might have eat with the ship’s soup since the 8th instant. It will be observed, from the report of that day, what amendment had then taken place.

“ Several of the scorbutics on board, with a milder disease, and who complained previous to this man, and who have regularly taken six ounces of lemon juice daily, continue now upon the sick-list, and will remain for some days yet to come. Such appear to be the antiscorbutic powers of the concrete salt of lemon !

“ THOMAS WATHERSTON, *Surgeon, Superb.*”

If ever a case of scurvy was delivered in an unvarnished tale, it is the present one. I directed Mr. Watherston to give eight ounces of the solution on the first day, and only six afterwards. When the disease is far advanced, as in this instance, there is a necessity of giving it a speedy check at once, which has been my constant practice. The result is certainly equal to any thing I ever observed from the recent fruit ; and I must remark, that thousands of common cases may be treated before a more decisive trial could be made. For my own part, I was perfectly satisfied, and gave the Admiralty that assurance in transmitting the original case to Mr. Nepean.

At this time I was using my utmost endeavours to call the attention of the ruling powers to what I considered a valuable acquisition to the naval department ; and, with that view, sent a jar of the acid to Lord St. Vincent, informing him thereby of my trial, and the satisfactory result. The admiralty, in consequence, ordered other experiments to be made, by the direction of the Sick and Hurt Board.

It

It now appeared, that the ingenious chemist had, previous to all this, applied to the patronage of Earl Spencer for trials of his acid in the navy. That respected nobleman had given orders to that effect; but how were they obeyed? The concrete salt was sent abroad to the West Indies and the Cape of Good Hope, climates where the disease is little known, and where the fruit is indigenous. This was literally sending coals to Newcastle; and so it fared with the concrete salt*.

The Honourable R. A. Berkley had also ordered a trial to be made on board the Saturn, one of the advanced squadron off Brest, then under his command, where scurvy was frequent; and two cases were selected by Mr. Perry; one of which took lemon juice, and the other the solution of concrete, of the same standard. Mr. Perry thought the preference due to the lemon juice in the cure, but I could not help thinking, that there were peculiarities in the case of the man that took the concrete, whom I examined, that fully accounted for the difference. Mr. Perry, at my request, tried another case with the crystals, and reports in the following terms.

“ The marine James Freeman, who first com-
“ plained of scurvy on the 11th of August, the
“ day you visited the Saturn, and for whose cure
“ you gave me some of Coxwell’s concrete acid,
“ was perfectly cured on the 24th of August.

* But the lemon juice itself was even sent in quantities to the West Indies, till an officer of great consideration called upon the surgeons of his squadron to know whether the juice sent from England was better than what could be purchased on the spot for one twentieth of the price. If any man was to bring coals from Wales, to work the steam-engines at Newcastle, what would you think of such a man?

“ According

“ According to your directions, I gave him eight
 “ ounces of the solution for the two first days, and
 “ six ounces a-day afterwards.”

Mr. Lloyd of the *Renown*, the flag-ship of Sir John Warren, Bart. made several trials, and uniformly effected rapid cures, which made him speak of the medicine with the utmost confidence.

Mr. R. Thompson of the *Childers*, a zealous and able young surgeon, in September 1800, thus mentions the crystallized acid. “ I beg leave to
 “ observe, that I have made trial of the crystal-
 “ lized lemon juice (during a ten weeks cruize)
 “ you have been so condescending to recommend,
 “ and I have the pleasure to say, that I have found
 “ it answer all the purposes of the fresh fruit.”

Mr. Scott of the *Ajax*, an experienced surgeon, gives similar evidence. Mr. Fleming of the *Impetueux* speaks favourably of it, but had not sufficient quantity to complete his cure.

On board the *Doris*, trials were made by Mr. Adamson with what had been sent to the *Ville de Paris* by the Commissioners of Sick and Hurt, as ordered, from my application, by the Lords Commissioners of Admiralty.

An equal number of patients, in symptoms nearly alike, were put on both acids for trial. For the three first days of their treatment, the whole had taken three oz. of lemon juice daily, besides an oz. as made into lemonade, which was now served by the purser, so that they might be said to have started tolerably fair. Mr. Adamson's concluding remark is to the following effect. “ According to the re-
 “ sult of my observation, the concrete is an effec-
 “ tual and active remedy, and, I think, more cer-
 “ tain and steady in its operation than the lemon
 “ juice, which, however, has been efficacious, and
 “ even specific, in the cure of the few complaints
 “ that

“ that have come under my observation. How
“ long the use of either may be continued without
“ injury to the stomach and digestive faculty, or
“ whether any injury will ever result from either,
“ and if so, which of them will soonest prove pre-
“ judicial, are circumstances deserving inquiry, of
“ which, from want of experience, I cannot form
“ a just conception. I began the concrete in small
“ doses, both to observe its effects in that way, and
“ having only a small quantity, with a prospect of a
“ long continuance at sea, I wished to reserve it
“ for more severe complaints, which I had reason
“ to expect in the sequel of our cruize. The fa-
“ cility of preserving Coxwell’s concrete, and its
“ conveniency at sea on account of bulk, are ad-
“ vantages obvious to every one. But I humbly
“ beg leave to observe, that, from its great resem-
“ blance to sugar, and other saline substances, it
“ appears as liable to adulteration as any prepara-
“ tion can well be conceived; and if considerable
“ quantities come to be demanded, preparations
“ of the same kind, from indigenous acid plants
“ or fruits may be substituted for that of lemon
“ juice. Its acidity is more concentrated than I
“ could conceive to arise from lemon juice, which,
“ with the aluminous taste it possesses, may give
“ suspicion of the presence of vitriolic acid. It
“ effervesces more briskly than lemon juice, with
“ salt of Tartar, and forms a transparent and ele-
“ gant neutral solution.”

With respect to the danger of adulteration and spurious substitutes, there is nothing applies to the concrete that does not much more affect the purity of the liquid lemon juice. Vinegar, when mixed with the latter, cannot easily be detected by chemical reagents; and I suspect the acetous acid is the present substitute, as being low in price. The only
acid

acid that comes near the concrete, is dry acid of Tartar, but their elective attractions are very different, and they could easily be separated and detected. With respect to the aluminous taste, as mentioned by Mr. Adamson, that is the same in all acids in a pure state; even lemon juice itself, when finely treated, by separating the dregs and mucilage, has this flavour. A bottle was brought to me by a surgeon, who suspected that his whole stock had been mixed with sulphuric acid, but, on trying it with muriate of barytes, no vitriolic acid was found. But had there been a spirit among us to receive into service this elegant preparation, all these exceptions would have been soon overcome, by having it manufactured on government premises; and I went so far as to propose Mr. Coxwell's appointment to the Admiralty in defending that part of the subject.

These are all the trials of the concrete that have come within my knowledge. Had the Admiralty consigned a quantity of it to my direction, the business could not have rested here. It was, however, too expensive for the prosecution of a poor individual like myself, and I must be satisfied with what I have done. The most sceptical will not doubt the evidence now produced in favour of this justly admired preparation: but it will be the task of a future generation to bring it from unmerited neglect into public benefit.* There is a singular difference between the support given to this *legitimate offspring* of modern chemistry, and what was bestowed on that *bantling* of false philosophy, commonly ycleped *nitrous vapour*. Since my attend-

* For an account of the difficulties I had to encounter in obtaining regular supplies of lemon juice before its general institution in 1795, see the first volume.

ance on the fleet, I have seen a number of printed works, distributed by the authority of Admiralty, on medical subjects, among the ships which I suppose came recommended from the physicians of the sick and wounded ; some of these did very little credit either to their authors or abettors, and I have seen them all glide away, "*nor leave a wreck behind.*" Many proposals that have come from my pen have been adopted, and given general satisfaction ; others, like the present, must wait the slow operation of time : to that, and the increasing spirit of improvement in the navy, I freely resign them.

From the immense stock of facts with which these volumes supply the history of scurvy, I do not find any reason to correct the early opinion which I formed of the theory of this curious disease. It has at least been proved, that no speculative notions have drawn us aside from the best methods of prevention and cure. Our doctrine was founded on very simple and obvious facts. It had been proved by decisive experiments, that the oxygenous portion of the atmosphere gave to the vital fluid its florid and lively colour : and that, when this was deficient, the blood, in proportion to the defect of oxygene, varied in its hue to the darkest shade. It had also been proved by the greatest chemical philosophers, that oxygene was the acidysfying principle, as far as human knowledge had advanced ; and thus the loss of it in the blood might be restored by the citric acid, so effectual in the cure. Our theory, therefore, appears as clearly demonstrated as it is possible, in reasoning on the action of medicines as affecting the living body.

I must now take leave of a subject that first drew me into notice as a medical author. That work
obtained

obtained me the unsolicited appointment of physician to the fleet, from an officer that I had never seen till the hour in which he was pleased to tell me of my promotion. The friendship and confidence with which I was honoured afterwards by that illustrious and virtuous character are the greatest ornaments of my life. My studies have therefore been highly favoured by Providence, if I have been at any time the humble agent in his hands of prescribing comfort to a body of men so useful to their country as British seamen.

P. S. January 31. 1802.—Since finishing this article, I have been honoured with a letter of Admiralty, inclosing me copies of a letter from the Commissioners of Sick and Hurt Board, a certificate from the surgeon of the Cumberland at Jamaica, on the inefficacy of the concrete citric acid in scurvy, and a letter from the captain of that ship confirming the surgeon's certificate.

From the authorities given in the preceding pages of this article, I have concluded, that this preparation of the lemon preserves entire the antiscorbutic powers of the acid. I am always ready to alter my opinion when there is due reason; but this certificate comes in a very questionable shape, and tells for nothing, as a detail of the trials does not accompany it. Mr. Watherston's case, from the collateral evidence which appears, I maintain to be worth a thousand trials of this kind. But it is not of much importance to the subject whether the solid salt is equal to the recent fruit; its value must rest upon curing the scurvy in any quantity however large, because it is easily portable, and may keep for ages, and cannot be adulterated without means of detection.

On the whole, I informed the Lords Commissioners of Admiralty that I continued unshaken in my opinion of the powers of the concrete acid. I regretted that the quantity sent to the Channel was not hundred weights instead of pounds, as the frequency of scurvy in warm climates is small when compared with the home seas; and I concluded by suggesting to their Lordships a *due allowance* of this preparation of the lemon to ships going on discoveries.

The Commissioners, in their letter to the Admiralty, say, that they had not yet received a report of the concrete acid from the surgeons at the Cape of Good Hope. A paper was sent to me six months ago, said to be a copy of a report from a surgeon at the Cape to the Commissioners on the effects of the chrySTALLIZED acid of lemons. As far as I could interpret the surgeon's meaning, it was *favourable*. I consider it fortunate for the service, on this business, as well as on many others, that in the Channel fleet inquiry has not been entered into with reluctance, or improvement followed up with indifference. The war is now over; and it may be a remote day before such testimonies can be produced as may, in the opinion of some, be sufficient to justify the supply of the new preparation to the navy; but thus far we are conscious of having meant well.*

* A work was noticed in our former volume by Mr. Patterson on the cure of scurvy by nitre and vinegar. Numberless trials have been made by different surgeons; but none that I can find could cure scurvy with this medicine. Mr. Bennet of the Excellent informs me, that, when he could do no better, he expended lbs. vij. of nitre, with a proportion of vinegar, not only without effecting a cure, but the disease was not even suspended in its progress.

MEDICINA NAUTICA.

Mr. FLEMING's REMARKS.

*EXTRACTS from Mr. FLEMING's Journal on board
l'Impetueux, Captain Sir E. Pelew, Bart. off
Rochford, from March till November 1801.*

The blockade of Rochford, in 1801, by a squadron of five sail of the line, under that gallant and enterprising officer, Sir E. Pellew, Bart. forms so prominent a part of the service of the fleet in 1801, that it deserves a distinguished place in our volume. The *Impetueux* took her station off Rochford early in April, and continued there till November; the other ships composing the squadron were occasionally relieved.

Mr. FLEMING's REMARKS.

“ March. Gales of wind from the S. W. and
“ cold bleak weather during the greatest part of
“ the month, which caused a number of catarrhs,
“ sometimes attended with a considerable degree
“ of pyrexia, but not of any duration. One man
“ fell overboard in the late gales, and, before a
“ boat could be lowered down and brought on
“ board again, a full quarter of an hour elapsed,
“ during which time animation was suspended.
“ However, by persisting in the plan pointed out

D d 2

“ for

“ for the recovery of drowned people, I happily
“ succeeded in restoring him to life.

“ April. Moderate weather during the whole
“ of this month; except five days (from the 9th
“ to 13th). Not one man with fever, although
“ the Robust is very sickly; the fever there appears
“ to be of the pneumonic typhoid kind. When-
“ ever the wind is westerly, we are employed
“ traulling, and with great success; sometimes I
“ have known forty messes served in one day, but
“ such is accounted very lucky. One of our mizen-
“ top boys fell from the mizen-top head, and all
“ the injury he sustained was only a luxation of the
“ ancle, and the end of the fibula fractured: he is
“ doing exceedingly well.

“ May. This month we pressed a number of men
“ from a cartel, one day from Nantz. A few days
“ afterwards, one of these people had all the symp-
“ toms of a real typhus, and remained for two days
“ in a comatose state. This induced me to make
“ farther inquiry, and at last some of them in-
“ formed me that he had only recovered from a
“ jail-fever about a fortnight previous to his being
“ sent on board the cartel. I had him removed
“ instantly from the sick-berth, and apart from
“ the rest of the ship's company; threw his bed-
“ ding and clothes overboard; had him well
“ washed, then spunged with vinegar; and, du-
“ ring the hot stage had recourse to the cold
“ affusion, not only to him but to most of the
“ others, when the fever was unaccompanied with
“ cough or oppression about the breast, and evi-
“ dently with benefit. Only one person is at
“ present confined to bed from this fever. He is
“ now in a profuse perspiration; and I have no
“ doubt that towards evening he will be so far
“ convalescent as to begin the bark.

“ I have

“ I have no doubt that the fever was of an
“ infectious nature; and was communicated from
“ the young man taken out of the cartel, to the
“ twelve marked in the return. Every precaution
“ was observed to avoid the introduction of any
“ contagion. I was sent on board the French
“ ship, and carefully inspected the whole that
“ were taken to the different ships of the squa-
“ dron, all of whom were well cleaned and washed,
“ before they were allowed to mix with the other
“ people. But notwithstanding these precautions,
“ one of them relapsed; and next day ten more
“ of our men were seized with fever. They
“ are now all convalescent except the one confined
“ to bed; no fresh complaints have appeared for
“ the last eight days, a proof that we have fortu-
“ nately succeeded in subduing the infection.—
“ Ulcers are now beginning to put on a vitiated
“ appearance, and difficult to heal; I presume it
“ to be in consequence of a scorbutic diathesis
“ gaining ground fast, as our people have had no
“ supply of vegetables since the ship left Caw-
“ sand Bay, now about three months ago.—A
“ poor old man, aged seventy-one, an old servant
“ of his country, died on the 29th. He had been
“ asthmatic for many years; a diarrhoea coming
“ on, carried him off in a fortnight, although he
“ had long complained of general debility, and
“ for which I wished to invalid him; but he
“ objected so strongly to that, by saying he must
“ starve on shore, which induced Sir Edward to
“ keep him, rather as a pensioner than a working
“ man.

“ June. Not a man has complained of fever
“ these three weeks; those who had typhus six
“ weeks ago, are now returned to duty. I have
“ seldom observed ulcers put on so foul an ap-

“ pearance (nine ulcers) in so short a space of
 “ time: the slightest scratch degenerates into a
 “ truly scorbutic fungous ulcer, in the course of
 “ one day. Several of our people have been
 “ seized with diarrhœa, which, I suspect, proceeds
 “ from the Isle Dieu water, and which is both
 “ muddy and strongly impregnated with salt; but
 “ no alarming symptoms accompanied any one of
 “ them*.—I am exhibiting the nitrous acid to
 “ one of my venereal patients †.

“ July. The weather is now exceedingly fine,
 “ and our people seem to enjoy a good state of
 “ health. Notwithstanding, the ulcers continue
 “ obstinate; which clearly indicates a prevailing
 “ scorbutic disposition; and which is not to be
 “ wondered at, when it is considered that our
 “ people have only received *three days fresh beef*
 “ *for five months past*. The supplies of fish have
 “ also been more scanty, in consequence of the
 “ squadron being necessitated to lay at anchor in
 “ Rochford, from the prevailing light easterly
 “ winds which might favour the escape of the
 “ enemy. The Serjeant of Marines is confined
 “ to bed from contusion; he expectorates blood,
 “ and passes it also by the rectum.

“ August. At no time during the cruize have
 “ we had so few in the list (thirty-one for the
 “ whole month,) as at present. The person with
 “ phthisis is now in the last stage; and so very
 “ much reduced, that he is unable to walk with-

* This was a common complaint in all the ships which watered at that island; but it was convenient to the men of war composing the blockading squadron, being in sight of the station.

† Other surgeons, particularly Mr. M'Donald of the Montague, have recently tried this remedy without effect. When administered after mercury, it has, however, as formerly remarked, done good.

" out assistance ; every morning I expect to find
 " him a corpse. The digitalis was prescribed
 " in the form of tincture, as prepared by Dr.
 " M'Lean *; gradually increasing it to the num-
 " ber of twenty-eight drops three times a-day ;
 " a greater always excited nausea, vertigo, stupor,
 " and distressing *delirium animi* ; clearly indicating
 " the impropriety of pushing the medicine to
 " greater lengths. What may appear singular,
 " though not the less true, is, that the pulse was
 " not arrested in the manner recorded by those
 " physicians, who have so ably detailed the vir-
 " tues and powers which this medicine possesses,
 " particularly its influence on the sanguiferous
 " system, and tubercular affections of the lungs.
 " The pulse was never under 108 strokes in a
 " minute for the last month : the hæmoptoe and
 " purulent expectoration continued undiminished,
 " and a leintery accompanied these distressing com-
 " plaints for three weeks, producing rapid emaci-
 " ation and extreme debility ; from thence I infer,
 " that the mesenteric glands were diseased.

" Our success in traulling for fish being some-
 " times so considerable as to serve a number of
 " messes in a day, by which means a large allow-
 " ance of salted provisions have been saved, and
 " suggested the idea of laying the foundation of a
 " SICK MESS, similar to that of the Centaur, which
 " form you have so earnestly recommended
 " throughout the fleet. On our arrival in port
 " this saving will be accounted for by the Purser ;
 " and converted into cash ; which will enable us to
 " carry to sea an ample stock of those *good things*
 " which so speedily recruit the sea-worn patient.

* See *The Medical and Physical Journal* for 1800.

“ September. Ulcers, that were so disposed
“ to extend and be troublesome, since the
“ late supplies of fresh beef and vegetables, al-
“ ready assume a most promising aspect in this
“ ship and all of the squadron. Inflammations of
“ the eyes have been very frequent; particularly
“ when the wind is easterly, and when we are near
“ the shore, which is low and sandy. If this has
“ been the cause, they have however not been very
“ permanent, but yielded to common reme-
“ dies.”

On the preliminaries for peace being signed, the *Impetueux* returned to port, having been nine months absent; a much longer time than has ever happened to any other ship cruising in the home-seas, where season and weather render frequent refitting necessary. From these fine practical remarks of Mr. Fleming we perceive, that even under the first discipline in service, disease, though much retarded, must in the end be the fate of a long cruise. The ship's company had an ounce of lemon-juice and as much sugar daily, according to the prescription of Lord St. Vincent, as a preventive of scurvy; and Mr. Fleming tells us they took large quantities of fish; and, what was still more in their favour, it was summer. Yet the scurvy appeared; and when it makes general progress in a ship's company, in proportion is muscular debility induced: the mind flags, from sympathy with the body; the spirit of courage and adventure is enervated, till, in the last stage, though the sailor may still be able to stagger about the deck, his heart fails, his strength is exhausted, even when he is plump in flesh, and he dwindles into a physical coward, in despite of moral opinions. In such situations of naval enterprise
the

the value of prophylactic measures becomes conspicuous. The medical officer is not only to assure his commander of a small sick-list, but he is to calculate upon the effective force of his men, that the power of muscular action may be entire in the hour of battle. The money that at this time was spent on the adulterated lemon-juice, was more than equal to a most plentiful supply of fresh vegetables at sea, which ought never to be withheld; and the lemon-juice should be confined, at least in cold climates, to the hands of the surgeon.

The facility with which the typhous infection, imported from the cartel vessel, was subdued on board the *Impetueux*, adds another proof to our opinion, that perfect discipline is the certain safety against contagious diseases; and whatever attracts the attention of the officer from that, is substituting quackery and deception for plain facts and obvious principles.

MEDICINA NAUTICA.

MR. WOOD'S REMARKS.

Mr. THOMAS WOOD of the Goliath on Nautical Medicine.*

“ Sir,

“ Goliath, 3d Feb. 1799.

“ Off Malta.

“ I have just received your circular letter, and
 “ regret much that I cannot have a conversation
 “ with you on its contents. I have read the first
 “ Volume of your Nautical Medicine, and have
 “ found it a repository of much useful matter; and
 “ I am pleased in finding that its success has en-
 “ couraged you to go on in the compilation of a
 “ second. I am inclined to think that its novelty
 “ will greatly promote its utility; for, as a new

* This valuable young surgeon, I am sorry to record, died at Palermo in Sicily, a short time after writing this letter, of a fever produced by extreme fatigue in the discharge of his professional attendance. The naval service of the country has sustained a great loss by the premature death of a man who possessed such promising abilities; and this Volume might have been enriched by his future communications; which my readers will not fail to regret, from the specimen here given of his talent for observation.

“ book,

“ book, it will be read with avidity by many who
“ would turn away with contempt from the plain
“ substantial precepts of Celsus, Sydenham, and
“ Boerhaave.—Your plan is an excellent one;
“ the navy is now very generally supplied with
“ skilful surgeons, or those that wish to be so.
“ A collection of the opinions, the facts, and the
“ practice furnished by such men, must be highly
“ interesting to a judicious investigator of medical
“ truth. If, from a collection of this kind, made by
“ four hundred surgeons, four or five useful apho-
“ risms be established, much will be gained for a
“ science abounding with darkness and conjecture.
“ From the communications furnished you, you
“ will, without doubt, find surgeons treating their
“ patients in a particular disease, some with one
“ remedy, some with another, and some with
“ none; and you will find the cures frequently
“ very equal in number. This will tend to
“ stagger people’s prejudices in favour of particu-
“ lar nostrums in medicine, and make them look
“ for the cure in something else. Circumstances of
“ ships and crews will be compared, and from these
“ the success of different plans may be estimated.
“ But the natural judgment, the zeal and tender
“ attention of the surgeon, on which so much of
“ his success depends, never can be committed to
“ paper. I might go on to a great length, use-
“ lessly anticipating what I have no doubt will be
“ accomplished. I will therefore confine the re-
“ mainder of this letter to what is more imme-
“ diately your object. In this age of invention
“ and discovery, I am ashamed to say, that though
“ I have not been idle, yet I have not been for-
“ tunate enough to invent any thing new to the
“ healing art; which, on consideration, appeared
“ to me worthy to supersede plans and remedies
“ approved

“ approved and sanctioned by able men and long
 “ experience. With respect to those things men-
 “ tioned in your letter, the following is my medi-
 “ cal creed, and from it you may easily conjecture
 “ my opinions on others.

“ 1st. All sudden changes of climate or sea-
 “ son are obviously dangerous. Hot weather is
 “ healthier for the generality of people than cold ;
 “ and dry, than moist. Temperate climates and
 “ seasons are the healthiest in general. Extremes
 “ are dangerous. People coming from a cold to
 “ a warm climate, require and bear moderate
 “ evacuations ; and people coming from a hot to
 “ a cold climate, require moderate stimulants and
 “ warm clothing. Changes of climate and season
 “ are among the most frequent and powerful causes
 “ of disease ; yet they do not always act immedi-
 “ ately and palpably, requiring sometimes a cau-
 “ tious retrospect to ascertain them.

“ 2dly. A light, dry, spongy, bubulous soil,
 “ that quickly absorbs humidity, is the healthiest
 “ to live near or upon.

“ 3dly. Ships, houses, or cities, placed where,
 “ from circumstances of climate or situation, the
 “ air and weather are changeable, abounding with
 “ cold or humidity, or loaded with animal or ve-
 “ getable miasmata, are to be considered naturally
 “ unhealthy. People new or unaccustomed to
 “ these places suffer most ; and among these par-
 “ ticularly, the ill-clothed and intemperate, people
 “ loaded with blood, or constitutionally or casu-
 “ ally debilitated.

“ 4thly. Water tainted or impregnated with
 “ any extraneous substance that it may have ac-
 “ quired in the air, in its bed, or in casks, is
 “ always rendered proportionably unwholesome,
 “ exerting upon the body the specific effect of the
 “ substance

“ substance which it contains. Its effects, how-
“ ever, are generally too weak to fix the atten-
“ tion, though the water on board a ship, from
“ carelessness in the filling, and its residence in
“ casks in the hold, does certainly tend to excite
“ nausea, indigestion, bowel complaints, and to
“ ultimately hasten the access of scurvy, and every
“ species of putrefence.

“ 5thly. Cold, crude, watery fruits, eaten to
“ excess, bring on nausea, indigestion, colic, and
“ fever, with more or less of cholera. These bad
“ effects are more frequent in autumn or winter,
“ and in people of cold inactive stomachs, and
“ weak viscera.

“ 6thly. That clothing is best that in all
“ climates and seasons cherishes a comfortable
“ warmth and moisture on the surface of the
“ body. Neglect in dress is particularly injurious
“ to people of weak viscera. A weakly, infirm,
“ ill-clothed ship's company, will never be healthy
“ in cold, wet, changeable weather; and under
“ such circumstances the hospital and the grave
“ will both have their share.

“ 7thly. That exercise or employment that
“ keeps the mind lightly and cheerfully engaged,
“ and the body moderately employed, is one of
“ the greatest preservers of health. It is particu-
“ larly necessary in cold and wet weather, and
“ unhealthy situations. Fatigue of body, and too
“ great application or distress of mind, are fre-
“ quent and dangerous causes of disease.

“ 8thly. The free introduction of atmospheric
“ air, is one of the most useful and indispensable
“ means of clearing a ship from every species and
“ variety of contagion. Every man contaminates
“ the atmosphere around him, more or less, with
“ putrid effluvia arising from every point of his
“ body;

“ body ; if this atmosphere is not frequently re-
 “ moved or diluted by a new supply of pure
 “ atmospheric air, respiration must be impeded ;
 “ the blood does not receive its invigorating,
 “ vivifying principle, and the animal juices and
 “ the solids gradually suffer in consequence, ac-
 “ quiring a putrid disposition, encouraging every
 “ species of scurvy, petechiæ, foul ulcer, &c. &c.
 “ one cannot expect to see the immediate effects
 “ of want of fresh air realised on board a ship, as
 “ in the black hole of Calcutta ; but the Hôtel
 “ Dieu of Paris, I am told, still affords an ex-
 “ ample. We are not yet sufficiently *au fait* in
 “ the chemistry of contagious gasses to point out
 “ a gas to neutralize them ; though, from the
 “ curious and unlooked-for discoveries that have
 “ been lately made in chemistry, and particular
 “ pneumatology, it is not absurd to expect it. Until
 “ that is ascertained, the mode of ventilation that
 “ least disturbs respiration, and least checks per-
 “ spiration, I believe, will be found the most
 “ salutary. Dampness and contaminated air are
 “ to be removed from a ship continually, and
 “ clear coal fires, placed judiciously throughout the
 “ ship, are the best ventilators in cold damp wea-
 “ ther. In dry weather the wind-sails should be
 “ always employed, attended by a weakly man,
 “ or a convalescent ; and they should be made
 “ larger than is customary. When a ship is
 “ sickly, or at anchor, in hot weather, her broad-
 “ side, when allowable, should be presented to
 “ the wind.

“ 9thly. An old weakly ship's company bears
 “ hot weather and moderate labour very well, but
 “ sink fast in cold weather and fatiguing duty.

“ 10thly. I have not been in the West Indies,
 “ and therefore I cannot say any thing on the
 “ yellow

“ yellow fever from my own experience. I have
 “ conversed with officers of all descriptions that
 “ have been there, and I have remarked from their
 “ accounts, that there was much timidity and per-
 “ plexity in the treatment. I consider all fevers in-
 “ flammatory *in principio*, though they cannot be
 “ all cured in same way. It is a question with me
 “ whether bark has any specific antifebrile effect in
 “ continued fever. Under my eye, in the greater
 “ number of cases when given during the fever or
 “ before the crisis, it has disordered the stomach,
 “ increased febrile anxiety, checked appetite, and
 “ often occasioned a diarrhœa, which has acciden-
 “ tally produced a crisis or termination of the dis-
 “ ease. Would not many other mawkish indigesti-
 “ ble powders, given in the same manner, and
 “ with the same faith, produce the same effects?
 “ In the fevers that I have had under my care in
 “ this country, I have frequently bled after the
 “ precepts of some of the old masters, with unex-
 “ pected success, often curing the disease, as it
 “ might be said, by the first intention. But this
 “ remedy requires more judgment in its exhibition
 “ than saline mixtures or antimonial powder; for
 “ where it does not immediately do good, it does
 “ much harm, and is not easily remedied.

“ I succeeded Mr. Burd in the Goliath, and I
 “ am happy in observing that his elegant and for-
 “ tunate operation has been rescued from oblivion
 “ by an insertion into your valuable work.

“ Full many a gem of purest ray serene,
 “ The dark unfathom'd gulphs of ocean bear.” &c. &c.

“ I have not until now heard of any new pecu-
 “ liarity of ulcer that called for the public atten-
 “ tion. I have seen the ulcers of some ships that
 “ were called bad or malignant, but I was not
 clear.

“ clear-sighted enough to see any peculiarity in
 “ them, or any difference from many that had fallen
 “ under my own care, and were easily managed
 “ when I treated them with moderation and pa-
 “ tience. I look upon the greater part of what
 “ has been called malignancy in ulcers, as well as
 “ in most other diseases, to depend principally on
 “ the treatment of the surgeon. But something
 “ certainly must be allowed for peculiarity of con-
 “ stitution, specific diathesis, and circumstances of
 “ the ship. An Italian epigram on a physician
 “ begins with

“ Io batterro da maligno

“ Agni mal che non intendo.”

“ However, perhaps I am too light on so grave
 “ a subject ; but I am well assured, that many ulcers
 “ that were pronounced specifically malignant, on
 “ changing their surgeon, and falling under the
 “ hands of a man that did not torture them, *con*
 “ *amore*, soon healed with common easy dressings,
 “ I have an old and infirm ship’s company under
 “ my care, and they are particularly disposed to
 “ this marine phagedenic, yet they recover with
 “ great ease, seldom requiring more than the ge-
 “ neral treatment of inflammation, rest, low diet,
 “ anti-scorbutics, open belly, opiates, and mild
 “ easy dressings to the sore. Notwithstanding the
 “ best attention to diet and anti-scorbutics, there is
 “ always more or less of a scorbutic diathesis
 “ in a ship’s company, and wounds do not heal
 “ quite so kindly as on shore ; and, when the
 “ wounds happen to be upon the legs or feet, they
 “ are frequently exposed to irritation from salt wa-
 “ ter when washing decks, striking against ropes,
 “ walking about, &c. When these causes are cor-
 “ rected or removed, a very simple treatment cures
 “ them all : but if a surgeon receives an ulcer or
 “ wound

“ wound in a state of sphacelus from high inflam-
 “ mation, and he thinks that there is some specific
 “ poison in it, and trying to heap fuel to the flame
 “ by stimulating irritating dressings, as lemon-juice,
 “ ol. terebinth. &c. &c. then the inflammation
 “ will go on, and the sore will throw off strata of
 “ gangrenous slough, till the habit is weakened or
 “ the part loses its high excitability, and then it
 “ gets well in spite of the surgeon. You may ob-
 “ serve, that on this head, as well as on most others,
 “ I have no novelty to propose ; I have heard both
 “ constitutional and topical specifics proposed for
 “ them, but I have seen them all fail in the hands of
 “ those that were fondest of them : for my part, I
 “ hold it ridiculous and unscientific to expect them
 “ when the disease originates from such a variety
 “ of causes. I therefore, not only from reasoning,
 “ but from experimental observation, consider them
 “ all, lemon-juice, fixed air, gastric juice, &c. &c.
 “ as equally ineffectual or injurious. Boerhaave
 “ hoped for a specific in small-pox and hydrophobia
 “ because they originated from specific contagion ;
 “ but I believe he never thought of it in ulcers.
 “ If a ship or sick-berth, from some peculiar cir-
 “ cumstance should be converted into a Hôtel Dieu,
 “ then what bolus, drop, gas, or plaister, will re-
 “ scue an ulcer from gangrene ?

“ Sincerum est nisi vas, quodcunque infundis, acescit.”

“ The grand preventive of scurvy is animal and
 “ vegetable diet, fresh, juicy, and invigorating ; a
 “ temperate climate, good clothing, and chearful
 “ mind, are powerful prophylactics. When these
 “ cannot be had, and the disease has taken place,
 “ then lemons and oranges are as much a specific
 “ in this disease, as mercury in the pox. I have per-
 “ used your book on scurvy ; I wish you could car-
 “ ry your chemical researches on the nature of
 Vol. III. E c scurvy,

“ scurvy and its correctors a little further. I shall
“ purchase Mrs. Melroe’s book, as I think with
“ Celsus, that frequently “ *Cibus opportune datus*
“ *optimum medicamentum est.*” Clean, elegant
“ utensils to eat and drink from, are also important
“ things in a sick-berth. I have been fortunate
“ in serving in ships where the captain and officers
“ have always been humane and liberal in supplying
“ pleasant refreshments to a weakly convalescent;
“ and to this I must attribute the recovery of many
“ valuable individuals. I have observed, that no-
“ thing is so grateful and cheering to a sick man as
“ this mark of concern and attention from his offi-
“ cers. I hope to have the pleasure of speaking
“ with you on these matters more at large.

“ I am, Sir,

“ with great respect and esteem,

“ your obedient servant,

“ THOMAS WOOD.”

MEDICINA NAUTICA.

Mr. WILSON ON FEVER.

An Account of a Fever, &c. in the Penelope, 1800.
by Mr. NATHANIAL WILSON, Surgeon.

“ DEAR SIR,

H. M. Ship Penelope, off Malta.
15th June, 1800.

“ BELIEVE me, it is not with an idea that any me-
“ dical information which my observation and
“ experience have suggested, will, in the smallest,
“ assist you in the compilation of your present
“ work, that prompts me to offer them, but gra-
“ titude to you, who have been, since I had the
“ honour of being known to you, so sincerely in-
“ terested in my welfare, urges me to take this
“ method of retaining still a place in your memory.
“ I sincerely hoped the late change in the medical
“ department would have placed you in a situation
“ where you would have had still a greater oppor-
“ tunity of displaying your well-known abilities,

E c 2

“ and

“ and of extending your beneficence towards our
“ corps : but I hope that is still in reserve, and will,
“ ere long, be verified. We sailed for this coun-
“ try in September 1799; your being at sea with
“ the fleet deprived me the pleasure of seeing you
“ previous to our departure. Since our arrival in
“ this country, we have been pretty successful; I
“ have to share prize-money for eight merchant-
“ vessels taken off Genoa, one Spanish corvette,
“ and Le Guillaume Tell of 86 guns, which to
“ Captain Dixon’s letter I refer you for particulars,
“ with regard to the share the Penelope had in cap-
“ turing her. We have been employed in this
“ blockade now four months. There are in Val-
“ lette, which is the principal garrison town in
“ Malta, and the only one in possession of the
“ French, two 64 gun ships, and three frigates.
“ The reports relative to its surrendering, all along
“ have been so vague, that I cannot say when it is
“ likely to give in. We have a squadron here now
“ of two ships of the line, four frigates, and three
“ sloops; the remainder of our force in this coun-
“ try are with Lord Keith at the blockade of
“ Genoa. Our force on shore consists of 1000
“ British, 5000 Sicilians, and 8000 Maltese. French
“ in Vallette, agreeable to report, 4000. Oc-
“ tober 1st, we anchored in Gibraltar-bay, where
“ we found the Leviathan, R. Admiral Duck-
“ worth, Vanguard, and Powerful. On the fol-
“ lowing day Captain Blackwood attended a court-
“ martial on board the Vanguard, when our boats’
“ crews had communication with that ship’s com-
“ pany, who, at that time, had a number of her
“ crew ill of fever. A few days afterwards several
“ of our people were taken ill, among whom were
“ two of the boats’ crews who had been on board
“ the Vanguard. During the time we lay at Gib-
“ raltar,

“ raltar, Dr. Weir being then resident at the hos-
 “ pital, allowed me an opportunity of conversing
 “ with him, and from him I received information
 “ of the Vanguard being sickly, and left no man-
 “ ner of doubt with regard to the introduction of
 “ the disease on board us *.

“ Having thus accounted for the origin of the
 “ distemper, I shall submit to you, as far as my
 “ observation will allow me, a short account of the
 “ symptoms and treatment. Our people, on be-
 “ ing first attacked, in general complained of
 “ pains of their back and head; nausea; and
 “ sometimes shivering; quick irregular pulse; lassitude;
 “ and total loss of appetite; of a particular
 “ burning heat; tongue dry and parched. Having
 “ served under Dr. Lind in the physical wards,
 “ Royal Hospital at Haslar, where I had an opportunity
 “ of seeing his practice successful in a number
 “ of cases marked with some of the above enumerated
 “ symptoms; and from which practice, with
 “ some variation, I was very successful in the cure of
 “ fevers during a servitude of two years and a half in
 “ H. M. ship Brilliant in the Channel and on the
 “ north coast of America. I therefore naturally
 “ adopted the antimonial plan, but, under it, found
 “ my patients daily get worse; pulse never failing
 “ to increase its frequency, and, in short, every
 “ symptom indicated the progress of the disease.
 “ My sick-list now had increased to thirteen:
 “ finding there was no time to be lost in the adoption
 “ of a different mode of treatment, and as
 “ every symptom indicated a furcharged system, I
 “ at once determined on blood-letting. Immediately
 “ on their complaining, I took eight or ten

* The weather was excessively hot and sultry.

“ ounces of blood from them, and repeated it *pro*
 “ *renata*; a few hours afterwards I gave a \mathfrak{z} i. pulv.
 “ ipecac. and at bed-time, opii. gr. i. \mathfrak{ss} . and, in or-
 “ der to obviate the constant constipation of the
 “ bowels attendant on the disease, I ordered small
 “ doses of calomel and jalap to be taken frequently.
 “ In pursuing this method of cure, as many as were
 “ free from impeded respiration had a crisis in thirty
 “ hours from the commencement of the disease;
 “ few relapsed*. Those who were afflicted with im-
 “ peded respiration and nausea I blistered, and gave
 “ frequently small doses of the solut. antim. tart. and
 “ where so great a degree of debility remained as
 “ to render the administration of the bark and wine
 “ necessary, it always completed the cure. Out
 “ of nearly one hundred patients which I had la-
 “ bouring under this disease in the months of Octo-
 “ ber and November 1799 †, I did not lose one,
 “ nor did I send one on shore. I am of opinion
 “ that this is a similar disease to that which has
 “ lately proved so destructive to our forces in the
 “ West Indies, but more mild, owing to the cli-
 “ mate not being so excessively hot, consequently
 “ night-dews not so very heavy, although at this
 “ very period, you would, in remaining a quarter
 “ of an hour on deck after sun-set, be perfectly
 “ wet, the night-dew is so heavy at this place.

“ The cure of ulcers is particularly difficult in this
 “ country; I have, however, been fortunate in not
 “ having many, and those I had, I have been able
 “ to get well by a similar treatment to that prac-

* “ Those who had not a turn in thirty or forty hours from
 “ the commencement of their illness, turned yellow, and re-
 “ mained so for some time after their recovery.”

† “ At Palermo we were supplied with abundance of fresh
 “ beef and vegetables.”

“ tised on board the Charon in 1795, at which
 “ time I was with you. Sixty or seventy of our
 “ crew * have, in the course of a week, contracted
 “ lues venerea. In the island of Sicily the only
 “ observation I made on that disease was, that the
 “ ulcers from buboes were more difficult of cure
 “ in this country than any I had ever seen before.
 “ The Northumberland off Malta, in the months
 “ of February and March last, lost a number of
 “ her crew by fevers; also the 59th regiment of
 “ foot, several officers, and a number of men, and,
 “ what is remarkable, the 30th regiment, quartered
 “ within a mile and a half of the 59th, scarce had
 “ a man sick in the regiment. The 59th were
 “ quartered on marshy ground. On the 30th
 “ March last, the French ship Le Guillaume Tell
 “ was captured off this island. After she struck
 “ there were found on board her 300 killed and
 “ wounded; out of that number there were up-
 “ wards of 30 capital operations, a number far be-
 “ yond the power of a surgeon and his mate to at-
 “ tend to †. Several who had their legs and arms
 “ carried away, except a small portion of skin by
 “ which they were suspended, remained in that
 “ state, without even the application of a tourni-
 “ quet, for the space of eight or ten hours, with-
 “ out the least hemorrhage of consequence taking
 “ place, two of whom I saw three days after they
 “ were operated on doing well. This is a great
 “ inducement for naval surgeons to defer capital

* “ I have, within these last seven months, cured 80 con-
 “ firmed cases of lues venereas by the common method of
 “ cure.”

† “ I had only one amputation in the Penelope. It did
 “ well: it was an arm.”

“ operations until the action is over, in order to
“ have day-light to operate with.

“ I have the honour to be, Sir,

“ your obedient humble servant,

“ NATHANIEL WILSON.”

P. S. This accomplished young man died in the Mediterranean some time after the date of this letter. The publication of this fragment is the last tribute which friendship can confer on departed merit.

T. T.

MEDICINA NAUTICA.

Mr. NEPECKER's REMARKS.

EXTRACTS from Mr. NEPECKER's Journal on board the Orion, before and after the Battle of the Nile. 1798.

“ ON the eighth of May 1798, the Orion left
 “ Gibraltar, in company with the Vanguard,
 “ Alexander, and some smaller vessels; the
 “ number on the sick list then was but small,
 “ and mostly slight; those incapable of duty
 “ were, one from old and habitual ulcer, (the
 “ man more than fifty,) and two accidents. On
 “ the fourteenth we passed Minorca, and on the
 “ seventeenth appeared off Toulon. During the
 “ gale in which the Vanguard was dismasted on
 “ the twenty-first, two or three additions were
 “ made to the list from accidents; but none from
 “ disease of consequence. In the return of the
 “ Squadron from Alexandria to Syracuse, from
 “ June 29th to July 19th, the ship continued
 “ perfectly healthy, with the exception of a few
 “ pulmonic complaints, notwithstanding the ex-
 “ treme heavy dews that constantly fell whilst
 E c 4 “ passing

“ passing the coast of Asia, and the south side
 “ of Candia ; they were, in my opinion, far
 “ heavier than any I have seen either on the coast
 “ of Africa or the West Indies, and but little
 “ difference in the night or day. On the night
 “ of August 1, 1798, five only were in the list,
 “ and of them but one incapable of going to his
 “ quarters ; he had some days before suffered a
 “ violent contusion, with a considerable wound
 “ about the ankle and instep, his foot having been
 “ caught in the main-brace when working ship.
 “ On the sixth, whilst in the bay of Aboukir, two
 “ cases of fever were received from the People
 “ Soverain, both of which soon recovered ; a third,
 “ sent from her on the sixteenth, proved speedily
 “ fatal.

“ It may not be improper to remark, that, con-
 “ trary to the expectations I had formed, and
 “ what the French officers and prisoners on board
 “ the Orion told me, the majority of the wounds
 “ received by our men in the action of August 1,
 “ (and they were upwards of fifty,) healed as
 “ soon, and with as little trouble, as I ever knew
 “ in any climate. An amputation above the knee
 “ was nearly well in three weeks ; and the patient,
 “ on his crutches about the ship in less than four.
 “ A severe wound on the shoulder, which began
 “ close behind the clavicle, near its junction with
 “ the processus acromion, and extending down the
 “ back, had in its course destroyed the spine of
 “ the scapula, was well on our arrival at Augusta,
 “ in Sicily on September fifteenth, notwithstand-
 “ ing the patient had part of the time laboured
 “ under flux ; this, I believe, was general through-
 “ out the Squadron.

“ With the prizes, and part of the Squadron,
 “ the Orion remained at Augusta, from Septem-
 “ ber

“ ber fifteenth to the twenty-first; during this
 “ time the different fhips completed their water;
 “ the watering-place is in a low marfhy ground,
 “ between the hills and the town; the duty re-
 “ quired the men to fleep on fhore. Watering
 “ with expedition is always hard fervice, and no
 “ care could perhaps prevent the men, during the
 “ night, from intemperance, where the means
 “ were fo readily found. No material complaint,
 “ however, occurred till September twenty-feventh,
 “ when three men were feized with fever, and on
 “ the next day two more, fhewing early appear-
 “ ance of danger; from that time till October
 “ tenth, fourteen were added to the number of
 “ thofe *ferioufly* affected, befides others whose com-
 “ plaints were flighter, and difappeared by timely
 “ evacuations; of the three firft feized two died,
 “ and one befides. It is worthy of notice, that
 “ but few of thofe who had been of the watering
 “ party efaped the fever in either a greater or
 “ lefs degree, whilft, on the contrary, but one
 “ inftance occurred of its attacking any other
 “ perfon, and that was one of the attendants on
 “ the fick, who was feized with it on the tenth of
 “ October.

“ I cannot but remark the fimilarity of circum-
 “ ftance mentioned by Sir R. Curtis, of the fever
 “ that broke out on board the Affiftance in 1762,
 “ amongft the men who had been on fhore during
 “ the night on the fame duty, at the African
 “ ifland St. Thomas, (who all fell victims to
 “ it,) whilft not another man in the fhip was
 “ affected*. By experience I know the duty of
 “ watering there in the day-time is not particu-

* *Vide Medicina Nautica*, Vol. I. Paper by Sir R. Curtis, Bart.

“ larly dangerous. Is it not therefore probable
“ that fever would not have occurred in the Orion,
“ notwithstanding the situation of the watering-
“ place, had not the men been under the necessity
“ of remaining on shore during the night ?

“ On the fever breaking out in the ship, (the
“ remaining wounded occupying the sick-berth,)
“ the gun-room was converted into an hospital,
“ and all communication cut off from the other
“ parts of the ship by means of a screen and cen-
“ tinels. The weather during the whole of the
“ passage from Malta to Gibraltar, with the ex-
“ ception of two or three days, allowed the ports
“ to be kept up at pleasure. Fires were placed
“ in the gun-room and over the ship, which was
“ repeatedly whitewashed, and the gun-room
“ steamed with vinegar; the clothes and bedding
“ of those who died were buried with them;
“ and those belonging to the convalescents well
“ cleaned and aired before they left the gun-
“ room.

“ On the 19th of October the Squadron an-
“ chored at Gibraltar, when the four men then
“ remaining in their hammocks were immediately
“ sent on shore; three of them recovered and
“ returned to England some time after; the other,
“ I believe, died there.

“ We were fortunate enough to have three
“ bullocks on board at the time of the action of
“ the Nile; and during the time of the whole
“ passage from Alexandria to Gibraltar, when our
“ ship's fresh provisions were expended, I was
“ enabled to supply both our sick and wounded
“ from the tables of Sir James Saumarez and the
“ ward-room.

“ W. NEPECKER.”

MEDICINA NAUTICA.

MR. BRIGGES ON MEDITERRANEAN DISEASES.

REMARKS on the Diseases of the Mediterranean,
by Mr. JOHN BRIGGES Surgeon of the *Ajax*.

THE following remarks on dysentery, fevers, ulcers, and the epidemic ophthalmia that was so general in the navy and army employed in Egypt, make a valuable addition to our subject. These were obligingly transmitted to me by the Honourable Captain Cochrane of the *Ajax*, an officer not more respected for his eminent professional talents, than his love of improving medical arrangements, science, and philosophy.

“ February 12th, 1802.

“ The number of sick on board his Majesty’s
“ ship *Ajax* has hitherto been very considerable,
“ occasioned in part by a great proportion of her
“ crew not being much inured to warm climates,
“ and a peculiar dampness of the ship, in consequence of having been built with bad unseasoned
“ timber.

“ I. Dr.

" I. DYSENTERY.

" The first and most inveterate of diseases, (the
" dysentery), commenced at Port Mahon, in the
" island of Minorca; but this I attributed chiefly
" to the bad quality of the water of that place;
" for, when lying there in the months of July and
" August 1800 in his Majesty's ship Audacious,
" I had undoubted proofs of it, as also observing
" its effects on board several other ships; but, in
" this last instance, it was far more violent in its
" nature than I had ever before observed it, partly,
" perhaps, from the causes before stated, and in
" addition to that, having on board a detachment
" of the 44th regiment, consequently the ambient
" air must be more replete with the seeds of
" disease.

" Some medical men are of opinion, that the in-
" flammatory dysentery, which prevails so much
" at Port Mahon, originates more from the insa-
" lubrity of the air than its waters. However that
" may be I cannot determine, but the many in-
" stances I have known of ships, particularly trans-
" ports, being there for a considerable time without
" having on board the least symptom of the disease,
" until reduced to the necessity of using those waters,
" which seldom failed of producing the most obsti-
" nate dysentery, inclines me to think differently.

" The usual methods of cure too often adopted
" in inflammatory dysentery by emetics and other
" evacuants, I have never yet seen productive of
" any one good effect, but, on the contrary, often
" do much mischief. Neither can I comprehend
" how a disease originating in inflammation can be
" alleviated by keeping the stomach and bowels in
" a constant state of irritability by a tedious and use-
" less perseverance in the administration of ipe-
" cacuanha, rhubarb, calomel, enemas, &c

" I have

" I have usually distinguished the diseases most prevalent in the Mediterranean into four classes, inflammatory and bilious dysentery, inflammatory and bilious fevers.

" In inflammatory dysentery, the usual symptoms of excruciating pains coming on about the *regio umbilicalis*; frequent inclinations to stool; sometimes vomiting; but what I think proceeds rather from sympathetic affection than any offending matter I ever observed in the stomach, and wherein I think the administration of emetics would rather endanger the life of the patient than alleviate his sufferings; tension of the abdomen; thirst; a fulness and frequency of the pulse in proportion to the violence of the disease; and last of all, a discharge of blood, &c. by stool.

" In this complaint, my first step was a plentiful blood-letting, and repeated to the proportions of twenty or thirty ounces every twelve hours, until the violence of the disease relaxed, which generally happened in the course of the third or fourth evacuation. The tension of the abdomen decreased; the extreme pains subsided by the second or third day; a diarrhoea frequently succeeded, which, with the use of weak lubricating drinks, seldom failed of performing a perfect cure about the sixth or seventh day; but in cases where the diarrhoea continued so as to occasion any considerable degree of debility, a few powerful doses of tincture of opium succeeded in the completion of it.

" By this mode of treatment, I have never failed of conquering the first attack of this disease, and only from repeated relapses have I ever lost a single patient, or few have I known to die of this
" malady

“ malady that did not, in some degree, fall the sacrifice of their own indiscretion.

“ The bilious dysentery generally comes on with the same violent spasmodic pains of the bowels; frequent inclinations to stool, without any relief; the patient complains of great heat and thirst, with a peculiar dryness of the skin, which feels more parched and dry than in the inflammatory dysentery. The pulse is not so full, but more frequent, and, as in the bilious fever, great prostration of strength. The discharge of blood by stool seldom commences before the third day, (which, in inflammatory dysentery, often comes on with the first symptoms,) and is frequently preceded by small discharges of a bilious matter.

“ This is a disease with which people are often afflicted on first coming into the Mediterranean, and requires a different treatment from the inflammatory dysentery; for, unless it be obviated by evacuants, (emetics, cathartics of calomel, &c.) it often terminates in very obstinate and dangerous consequences. In this also where the heat is considerable, bleeding becomes indispensibly necessary, for I have always seen it productive of the happiest effects.

“ The use of flannel, so much spoken of by Dr. White, is no doubt a grand auxiliary in the cure of dysentery or diarrhœa, and what I have seen productive of much good in every case wherein it was applied. The sort I generally made use of consisted of common ship's blanketting: a strip is passed three or four times round the loins or abdomen, extending from the pubes to the sternum, moderately tight, and retained on until the patient was well. However it is by no means either a new or unusual preventive in many parts

“ parts of the Mediterranean, particularly at the
 “ island of Malta, where, instead of flannel, they
 “ use a thick warm belt of cotton, passing it several
 “ times round the body. Taught its utility by
 “ long experience, no labouring men are without
 “ them, being considered as the almost never-fail-
 “ ing antidote of dysentery and lumbago.

“ II. ULCERS.

“ The violence of this disease had scarcely sub-
 “ sided, when another, if possible, more perplex-
 “ ing, manifested itself among a great many of the
 “ ship's company. These were ulcers of a most
 “ inveterate nature, which from the slightest wound
 “ often extended itself in a few days to the bone.

“ In many instances, their first appearance was
 “ made by a small pustule containing a limpid fluid,
 “ in others, by pain, hardness of the limb or part
 “ affected, and inflammation. These I treated
 “ for a long time simply as scorbutic ulcers, but
 “ am now of opinion they proceed from other
 “ causes, for persons afflicted with them seldom
 “ had attacks of any other disease, which induces
 “ me to think that they originate rather from an
 “ effort of nature to throw off some noxious mat-
 “ ter lurking in the system than merely what is
 “ called scorbutic habit.

“ Another circumstance which confirms me
 “ more in this idea is, that most of those ulcers
 “ commencing with a small pustule, and the fluid
 “ contained therein being of a yellow tinge, al-
 “ ways undergo a sensible change on the adminis-
 “ tration of emetics; for, in most of these cases, the
 “ stomach has been very foul, the patient always
 “ discharging a great deal of bilious matter.

“ Emetics I have always found more effectual
 “ than any other evacuants in these cases, and ge-

"nerally observed, that the wounds sooner exhib-
 "ited a healthy appearance, and the discharge
 "assumed a better colour than from the operation
 "of cathartics; whereas, on the contrary, if omit-
 "ted, the patient often loses his strength and ap-
 "petite; he becomes emaciated; his skin partakes
 "of a yellowish tinge, the wound grows worse every
 "day; violent pain and inflammation succeed, ex-
 "tending itself with incredible rapidity, which soon
 "terminates the life of the patient; for in cases
 "of these very extensive sores of this nature that
 "may ultimately terminate so as to admit of ampu-
 "tation, debility is so very considerable, that the
 "patient, in all probability, never can recover.

"But it often happens, that neither medicine nor
 "topical applications seem to have any influence
 "in stopping the progress of these sores for the
 "first five or six days. Discutient washes, and ca-
 "tapsms, repeated blood-lettings, evacuations
 "by cathartics and emetics, a plentiful use of vegeta-
 "ble acids, with nothing but a farinaceous and ve-
 "getable diet, do, in some cases, appear to me
 "to mitigate their violence before the fifth,
 "sixth, or seventh days. While many of those
 "which I left almost to nature, with the assistance
 "only of keeping the bowels in a laxative state,
 "preceded in general by an emetic, as before
 "mentioned; emollient catapsms, prohibiting
 "the use of wine or spirituous liquors, and substi-
 "tuting vegetable acidulated drinks, were often
 "sooner restored than those subjected to a
 "more rigid discipline. Though the inflammation
 "extended, in some instances, beyond the limits ex-
 "pected, for, in the first mode of treatment, the
 "debility occasioned by it impeded the cure, while
 "in the other, the granulations were more luxu-
 "riant, discharge in general better, and cicatrization
 "rapid.

" Imme-

“ Immediately on the appearance of these or
 “ any other sores, I restricted the patient to fa-
 “ rinaceous and vegetable diet, allowing no kind of
 “ animal food, and wine only in particular circum-
 “ stances, substituting vegetable acids, sugar, &c.
 “ In the convalescent state I have usually allowed
 “ such proportions of fresh provisions as the situa-
 “ tion would admit of, with a liberal use of bark
 “ in the vegetable acids, with sugar, wine, opium,
 “ &c. which plan, considering the great number I
 “ have had committed to my care, the many pri-
 “ vations they suffered, and in a climate by no
 “ means favourable to their recovery, I have pur-
 “ sued with much success.

“ III. FEVERS.

“ *Ardent and bilious fevers* are diseases common
 “ to all warm climates, and so well known that
 “ any further description of them would be super-
 “ fluous, and the methods of cure too simple for
 “ any medical man to err in; nevertheless when
 “ the proper means are not embraced in the earlier
 “ stages of this disease, they seldom fail to procrast-
 “ tinate much the patient's recovery. However
 “ nature so clearly prescribes what ought to be done,
 “ that such mistakes cannot often happen.

“ Complaints of the lungs of the most obstinate
 “ nature, often succeed inflammatory fevers, if not
 “ obviated in its commencement by large and re-
 “ peated bleedings, until every symptom of inflam-
 “ mation mitigates. And the bilious fevers, when
 “ the stomach and bowels are not freed immediate-
 “ ly of their noxious contents by evacuants, eme-
 “ tics, colomel, purges, &c. the prostration of
 “ strength brought on by long neglected sufferings,
 “ soon reduces the unfortunate patient to such a
 “ state of debility that no medical aid can again
 “ restore.

“ Many medical men, on first coming into this
 “ country, apprehend that bleeding in inflamma-
 “ tory fevers may be productive of bad conse-
 “ quences by too much debilitating the patient in a
 “ clime so different to their own. But in my
 “ opinion, that very increase of heat renders blood-
 “ letting more necessary and copious, as the in-
 “ flammatory state will be naturally augmented.
 “ Indeed I cannot help thinking, that many of those
 “ pulmonic affections which prove so obstinate in
 “ the Mediterranean might often be prevented by
 “ a bolder practice in their commencement ; for
 “ I conceive that a free and early use of the lancet to
 “ immediately remove the cause of the patient’s
 “ sufferings, carries with it a less probability of
 “ producing bad effects than trusting to the uncer-
 “ tain aid of antimonials, nitre, &c. a mode that
 “ must require a much longer period to produce
 “ any effect at all, and seems a very likely way to
 “ produce the very evil they so much wish to avoid.

“ IV. OPHTHALMIA.

“ The next disease, and which merits much the
 “ attention of the medical department in this coun-
 “ try, is the ophthalmia, a complaint from which
 “ the army of Egypt has so much suffered.

“ In the month of September 1801, it, for the
 “ first time, made its appearance on board the
 “ Ajax, then at anchor in Aboukir-bay. I at first
 “ pursued the usual methods adopted in the army
 “ for its cure, such as blistering, bleeding, repeat-
 “ ed cathartics, &c. but I have never observed
 “ this plan to succeed better than less violent re-
 “ medies. Blisters no doubt give a temporary ease,
 “ and to effect that purpose, it is necessary they
 “ should be placed as near to the seat of the disease as
 “ possible. But the extreme pain and inflammation
 “ which

“ which often occurs in irritable habits after blisters,
 “ have defeated all the good that can be expected
 “ from them; not only terminating often in trou-
 “ blefome fores, but I have seen them often in-
 “ creafe the inflammation and turgidity of the ves-
 “ fels of the eye; therefore, except in some very
 “ violent cafes, I have never troubled the patient
 “ with blisters.

“ From blood-letting I have not been able to
 “ diftinguifh any good effect, neither do I conceive
 “ it at all neceffary: even topically, I never could
 “ obferve it to produce that relief which might
 “ be expected from it.

“ This is a difeafe particularly peculiar to
 “ Egypt, and the many pretended caufes I have
 “ heard affigned for it, are nothing more than
 “ opinions ill-founded. Some adduce that it pro-
 “ ceeds from nitrous exhalations of the foil: if that
 “ be the cafe, I cannot comprehend how fhips
 “ cruizing in thofe feas, having no communication
 “ with the fhore, fhould have their crews afflicted
 “ with opthemia in fo violent a degree, when the
 “ wind blows constantly from the northward and
 “ weftward at the very period this complaint is
 “ moft prevalent, confequently the exhalations of
 “ a fouthern fhore cannot affect people cruizing
 “ perhaps fifty or fixty leagues to the northward of
 “ it. Others have asserted, that fmall particles of
 “ fand constantly floating in the air are the principal
 “ caufe; but this, for the fame objections affigned,
 “ cannot exift.

“ I muft confefs I have not had many opportu-
 “ nities of feeing any of thofe cafes through their
 “ different ftages on fhore. However, from the
 “ few obfervations I have been able to collect, I
 “ conceive the real caufes to be fo remote, that no
 “ very fatisfactory reafon (at leaft any I have heard

“ of) has yet been assigned for it. Perhaps such
 “ a discovery might lead to methods of cure more
 “ easy, although the present one seems very simple
 “ and very rarely fails of success.

“ The only opinion I have to offer is, that the
 “ disease is endemical and periodical, which last cir-
 “ cumstance seems to deny the possibility of its be-
 “ ing occasioned by irritation from sand or exhalations of the earth, for these being causes that always exist, I should think, for the same reason, that people would, at all times, be equally subject to the ophthalmia, which is known not to be the case. Moreover it is epidemical, for I have seen it in many instances produced by communication, often affecting whole messes of six or eight persons, who, perhaps, from not taking the precaution of cleansing their hands after washing and touching their eyes, have, by using the vehicles their messmates might have occasion for, thus communicated the disease to them also; for if one only be affected, passing the discharge into the other eye in the earlier stage of the disease, it will soon produce it in that also.

“ But, as I have before observed, the methods of cure are very simple, except in very violent cases and bad habits, and any thing more than a weak solution of ext. saturni. with a particular attention to cleanliness and keeping from lights, is unnecessary. Some find great relief from a constant application of cold water; others more from sea-water than fresh; but that depends on circumstances, not being always the case, its effect varying much in different subjects: the bowels should be kept in a laxative state, (for that purpose I prefer the *natron vitriolatum*,) avoiding wine or spirituous liquors for six or eight days, when the inflammation generally begins to subside. So soon as this happened, I usually
 “ had

“ had recourse to some stimulus to assist the vessels
“ in the re-absorption of extravasated blood on
“ the *tunica adnata*, which proved very tedious
“ without, for which purpose I have always used
“ the tinct. opii, introducing a drop twice a day ;
“ from this the patient, after its first effect, always
“ experienced a sensible relief for hours after its in-
“ troduction; and thus the cure was in general
“ completed in twelve or fourteen days.

“ In many instances I have seen them much more
“ obstinate, attended with violent and dangerous
“ relapses, but these I impute more to the indis-
“ cretion of the patient than any other cause ; for,
“ in the convalescent state, the exposition of the
“ eyes to a strong light, or the patient falling into
“ any of those excesses to which seamen, &c. are
“ addicted, frequently bring on very obstinate
“ relapses. In these cases only have I ever ob-
“ served blisters to be useful, or, indeed, of any ser-
“ vice whatever.

“ I believe there are few diseases with which
“ mankind are afflicted, wherein he suffers greater
“ torture than during the paroxysms of ophthalmia
“ in its bad state. The periods of its coming on
“ are about the hours of sun-set and rise, and con-
“ tinues with the most excruciating pains until mid-
“ night ; it then begins to abate, but recommences
“ with the rising sun, and lasts until mid-day, and
“ sometimes has no remission, continuing in this
“ state from three to twenty days, if not obviated
“ by some very powerful sedative. From the use of
“ opium (which plan I did not adopt till of late)
“ I have invariably observed the happiest effect
“ from being given in doses of 60 to 100 drops,
“ (depending on circumstances,) about half an
“ hour preceding the paroxysm ; but I have often
“ given it after the coming on of the fit with nearly
“ equal success ; and never since I discovered its

“ utility have I omitted it in violent cases. It has
 “ frequently happened, that after the second or
 “ third time of taking it, (when given in sufficient
 “ proportions,) that the paroxysm has not re-
 “ turned at all, though the attack had apparently
 “ been of the most violent nature.

“ Of one hundred and thirty bad cases I have had
 “ under my care, one man only lost the sight of one
 “ eye, in consequence of a relapse, and a very bad
 “ habit of body beside, and of slight cases as almost
 “ many more, all of which are perfectly recovered.

“ It is with much pleasure, Sir, I comply with
 “ your request in this account of the few preceding
 “ observations made on diseases most prevalent in
 “ the Mediterranean. They are all I have to
 “ offer ; and these were only committed to paper
 “ merely to assist my memory, therefore they will
 “ not appear in that order they ought, had they
 “ been intended for other inspection.

“ But should Doctor Trotter find among these
 “ any remark worthy his attention, it will afford
 “ me an additional gratification. I am, Sir,

“ With the greatest respect,

“ Your very obedient servant,

“ JOHN BRIGGES.”

“ *The Honourable* ALEXANDER COCHRANE.

“ Spithead, February 8th, 1801. H. M. Ajax.”

It is probable from this account of OPTHALMIA, that the causes producing it are chiefly to be referred to variations of season, which depend on changes of temperature, just as we have observed the same disease in the Channel. The sensation of a rough body rasping the eye-lids, which is a very common attendant, occasioned by the turgid vessels of the *adnata*, might give the idea to the patient of sand producing the effect. But changes of temperature in the atmosphere certainly better explain this, as well as the appearance of other inflammatory affections.—T.T.

MEDICINA NAUTICA.

SICK-BERTH.

THE apartments of the sick, before the present war, were very imperfect; and it was not till my appointment to the Channel fleet, that any regular plan was adopted. Some rivalry has been exerted since that time; and they have now attained the last degree of convenience. This subject, I suppose, in former wars, was like most others that related to health in the navy; it excited little attention, and none of the preceding writers make the least mention of a commodious spot being set apart for the sick. In the first ship where I was Surgeon's Mate, I remember a sick-berth, half-inclosed with hammocks, being fixed near the galley; more with a view to stifle contagion with the smoke from the fire, than to keep the patient comfortable. Lind's doctrine of fumigations was then in its full vigour, to which our Captain, like all others, bowed with submission. If, however, infection, by this means, was roasted to a cinder, the poor sick man was often in danger of losing his eyes from the wood-smoke in
undergoing

undergoing this fiery ordeal. Lind took it into his head that the situation of the fire-place in small vessels, between decks, by affording copious supplies of smoke, was the true cause of these ships being more exempt from infectious diseases than large ones. This notion has been, with many others, copied implicitly by a later writer; but is much easier resolved by attributing it to a smaller number of men, where fewer raw land-men are admitted; to a more perfect ventilation, as there are fewer decks, and the motion of a small ship being more constant, which tends to agitate the body of air within it, and thus more frequently receives a fresh current, while the foul air is thrown out. I therefore contend, that the atmosphere in a small vessel is more pure than in a large one; which will account for the superior healthfulness of the crew. By the same mode of reasoning, the small ship is less troubled with scurvy, which is daily exemplified: nay, it is observed, that the officer and seaman in the frigate and sloop, retain at sea much longer that ruddy complexion which indicates an exemption from a scorbutic disposition. Nothing in our practice is better certified than this. The purer atmosphere thus sustaining the excitement in a healthful degree, the vital principle preserves full vigour, and escapes typhoid fever; the scorbutic tendency is also opposed by the more oxygenated quality of the air, which would be otherwise exhausted by a sea-diet.

For the present improved sick-berth the navy is indebted to Captain Markham of the Centaur. In a former Volume of this Work *, that officer's attention to the sick-bed is noticed in terms of high

* Vol. I.

commendation. It well became a gentleman educated under the religious roof of the worthy Archbishop of York, to feel for a brave man in the season of disease. Under the article of Diet for the Sick, I have detailed the numerous and substantial articles of comfort which he established in the Centaur; and under his direction the sick-berth was furnished in a style of delicacy and comfort, much beyond any ward in our Royal Hospitals.

I had been in the practice of recommending the model of the Centaur's sick-berth, for a length of time, to surgeons and officers; but when Lord St. Vincent took the command of the fleet, not more than four ships had followed my advice; so difficult it is to effect improvements.

The MARKHAM SICK-BERTH takes in the two foremost guns under the fore-castle, all that space from the ship's side to the fore-mast, so that it includes the round-house and head-door, and also the midships, which was formerly occupied by a pig-stye. The head-door is converted into a sash-window, and occasionally into venetian blinds. Over the midships is a large sky-light, which gives a cheerful appearance to the whole; and in warm weather is thrown open, so as to cause a fresh current of air to pass through the ports and head-window. The walls of the sick-berth are either pannels of deal, or strong canvas, so closely put together as to exclude the smoke from the galley fire; and nicely whitewashed once a month. The furniture consists of commodious benches, and a settee for the weakly people to recline upon. Tubs and pales for washing, cooking vessels, with towels and clean canvas table-cloths, dishes, spoons, knives and forks, &c. complete the utensils,

utensils, all of which are kept in fine order, in concealed lockers within the sick-berth. A canvas cot or two, with hospital bedding, neatly surrounded with clean white callico curtains, are kept for fractures or particular surgical cases. The utmost attention is paid to cleanliness and purity, which is easily done, as the round-house is often washed. In cold or damp weather a hanging-stove, with clear embers, is brought in, and also when the deck is scrubbed.

The space between the head-doors, and under the sky-light, is used as a dispensary, and elegantly fitted, with a desk; and along the head are ranged the drawers and bottles for present use; in a style of neatness that would do credit to the first apothecary's shop in London.

We have always inculcated the practice of seeing and examining every person in the list in day-light; and a sick-berth thus constructed makes it more convenient. It is of much consequence in particular diseases, such as the accession of typhus to see the countenance by day-light; the very cast of the eye and hue of the face are leading characteristics of early infection. In surgical cases, such as wounds and sores, it is also of the first importance to view them in a clear manner, for the treatment so much depends on the appearance and colour of the matter and surface of the ulcer. All these advantages are now obtained in the highest degree; and I trust service will never again relapse into the slovenly habit of dressing or examining the sick in a cockpit. A seaman who is careless of his person cannot conceal his sloth in this spacious and shining apartment, and it prompts every one to personal delicacy, which is the first virtue in all hospital arrangements.

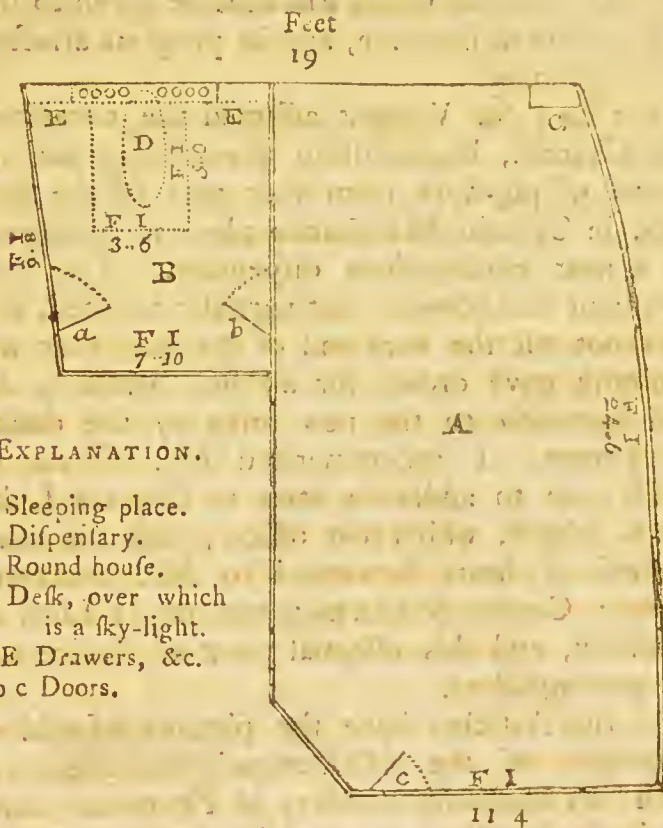
A sick-

A sick-berth of these dimensions, in the larger class of seventy-fours, gives room sufficient for twenty-two people to hang up their beds, with full advantage to attendance and purification. It can seldom happen in a ship duly regulated, that more space can be wanted, as a convalescent temporary berth can be easily erected on the opposite side. An effectual check can thus be given to the first symptom of infection, and its progress arrested in the beginning.

After Earl St. Vincent assumed the command in the Channel, his Lordship gave orders for the removal of pig-styes from that part of the ship which, in Captain Markham's plan, is converted into a neat commodious dispensary. The improvement was however but partially adopted, and it was not till the very end of the war, that the Admiralty gave orders for all sick-berths to be fitted agreeable to the new form by the dock-yard joiners. I recommended Mr. Cairns of the *Hercule* to address a letter to Captain Luke on this subject, which that officer, with his usual goodness of heart forwarded to Mr. Secretary Nepean: Captain MARKHAM was now a Lord of Admiralty, and this essential point of service was thus accomplished.

To this Article I have the pleasure of adding a draught of the MARKHAM'S SICK-BERTH, which Mr. Marshall, builder, of Plymouth-Yard, obligingly furnished for me, by sending one of the draftsmen in his department to Cawsand Bay for that purpose. It is taken from the *Mars*, the flag-ship of Rear Admiral Thornbrough: Captain Lloyd, in the construction of this berth, gave every joiner in the *Mars* to the disposal of Mr. Peter Blair the surgeon, till it was fitted in the first style for elegance and accommodation. The
decks

decks of the Mars, at this time, perhaps exhibited, above and below, the finest appearance of any ship in the British Navy. Captain Lloyd had even been at the expence, and trouble to paint all his *lower deckers* white, which gave the cheerful look of a drawing-room, to a battery of thirty-two pounders.



MEDICINA NAUTICA.

DIET FOR THE SICK.

IMPROVEMENTS in the medical department of the navy have been more difficult to effect, and more slow in their progress, than in other branches of the service. In one view this may appear strange; as it might be expected that men in power, who are answerable to their Sovereign and country for their measures, would be glad to patronize every thing that could secure health; for without it a fleet or an army are nothing. Another circumstance, one would believe, to awaken their condescension still more is, that they sometimes become sick themselves, which ought to make them feel for others. Nevertheless the subject is too much neglected; it is with a cabinet of Ministers as it is with individuals, the value of health is never considered till it is lost.

The knowledge of medicine may be said to be insulated; it is in a great measure confined to those who practise it as a profession for a livelihood. You will meet with men of the first talents and endowments, who excel in philosophy, literature,

and the fine arts, who have never devoted a single hour to the study of their own frame, its form and movements in health, or the changes which these undergo by disease. The subject of sickness therefore, because it is painful to think about, ceases to be thought of at all; and if it did not give bread to a part of the community, it is probable that the whole of mankind would fall into the grave without a single dose of physic. It seems indeed a fortunate circumstance for that portion of human beings who pass a great part of their days in poverty and affliction, that a certain class of men support themselves by adventuring to cure diseases. The numerous charities which abound in these kingdoms, owe much of their institutions to physicians. The man of feeling and principle, who is witness to so much wretchedness, cannot fail to impress some of his acquaintance, with his conversation; and if he can only persuade them to go and look at what he describes, the work of benevolence is more than half done.

These reflections naturally arise from my present subject. The representations which have been made on the diet of the sick berth, and the frequent mention of it in my writings, as well as in my official intercourse with officers and surgeons, have greatly contributed to improve it. Indeed this department was little attended to in former times; and preceding writers on the diseases of seamen had almost thought it beneath their notice. This was common to the ship and the Royal Hospital; a striking instance of which appears in my first Volume; where a Captain of a man of war came to visit a number of men at Plymouth hospital, that had been sent on shore very ill of scurvy. Upon inquiry he found that they were allowed *no vegetables*, and was told by some of the attendants

attendants that none could be got. Astonished at such treatment he went to the market-place and bought a large assortment, and sent them to his people.

In my second Volume was given a letter from a female correspondent, Mrs. Melroe, who was an author on cookery in dear times; in which is detailed a method of preparing soup, that is easily practised at sea; and which was recommended to the attention of the navy Surgeon. My recommendation, however, did not make that impression I wished: without the authority of command little is to be done in this way. This industrious lady addressed some of the inferior Public Boards, with a view to get her cookery introduced into the navy; and I have been told that she walked the pavement round Somerset-house, till the shoes were almost worn from her feet, in hopes of at least obtaining the sale of her book. Alas! inconsiderate female! to offer cheap dishes to the rich sons of office, in Somerset Place; were ever time and talents so misapplied! Change thy theory; go to the shop of Burgesses, where you will find the essence of twenty fat hogs, (food for a parish!) concentrated into as many quarts of sauce; take that, mix it by thy culinary powers; and thou shalt be soon rewarded; suit it to the palate of Quin, and Handel, and thy books will sell: but let thy suet-broth, and Colonel Paynter's soup remain for half-pay naval lieutenants, masters, physicians, and surgeons*!

Amidst a few testimonies in favour of Melroe broth, I shall select only the following, from Dr. Whyte of the Atlas, and Mr. Farquhar of the

* The receipt for Colonel Painter's soup is copied from a Newspaper into Mrs. Melroe's Book on Cheap Living.

Longman and Rees, Paternoster-Row, London.

Captain. It has at all times been much more grateful for me to listen to a surgeon's catalogue of dietetic comforts in his sick-berth, which in these quarters are the soul of recovery, than all the fastidious parade of bolus and mixture, which are served up *secundum artem*. Dr. Whyte says, "On reading in your second volume an account of Mrs. Melroe's suet-soup, I had immediately a small quantity prepared. Although neither onions nor leek-seed could be procured, I have the satisfaction of informing you, that it was pretty generally relished. It is not equal to fresh beef-soup, but preferable, in my opinion, to any mess that can be made of salted meat. In consequence, I had a kettleful boiled every day for my patients during the greater part of our late cruize.

" If good dishes be proper for the sick, and if this be one, that is not only in itself good, but cheap, palatable, and easily prepared, the very few ingredients necessary to compose it might surely be supplied by government; and I flatter myself, on your representation, the noble Lord at the head of the Admiralty, who has on all occasions shown himself so attentive to the health of seamen, will, by allowing suet, &c. for this purpose, give an additional token of his wisdom and philanthropy.—Atlas, Cawland-bay, June 1799."

Mr. Farquhar of the Captain, during a long winter cruize in 1800, also found this mess highly serviceable. "I believe," says he, "I have already mentioned to you that I had found Mrs. Melroe's soup, recommended by you in the second volume of your Medicina Nautica, to answer extremely well; it makes a very comfortable and palatable

" mess,

“ messs, and is much better liked by the seamen
 “ than the portable soup as it is commonly used.”

Captain MARKHAM'S Sick Messs.

Captain Markham of H. M. S. Centaur, having for a length of time directed the sick-berth of this ship to be furnished with fresh meat, vegetables, fruit, soft bread, porter, cyder, &c. by a plan devised by himself, without costing government a shilling, I must now detail his method, in hopes that every captain and surgeon will follow an example so worthy of imitation. I cannot recommend this plan in a better manner than by presenting a copy of my public letter to the Admiralty on this interesting subject, written with a view to obtain the patronage of their Lordships, as the best and most certain means to make it general.

“ SIR,

May 8th, 1800. Cawland-bay.

“ Having at different times, in the course of my
 “ attendance on the fleet, represented to their
 “ Lordships the very great advantages which the
 “ sick of the different ships at sea would derive
 “ from the use of fresh meat, a better wine, porter,
 “ vegetables, and fruits in season, it has hitherto
 “ happened, that the method of obtaining this sup-
 “ ply has been objectionable ; and consequently,
 “ it was only followed up for a short time. But
 “ having still kept this object in view, and the
 “ wants of the fleet having been greater for the
 “ last two years than at any period during my ser-
 “ vice, I have now to request the attention of their
 “ Lordships to a plan which has been already prac-
 “ tised in a single ship, and which, by meeting

“ with the countenance of their Lordships, could
 “ not fail to become general throughout the navy,
 “ to the uncalculable benefit of the sick-bed, and to
 “ the public service.

“ The plan is to establish a mess for the sick, by
 “ the consent of each ship’s company, which is to
 “ be done from the salted provisions, &c. which
 “ the sick are unable to use when indisposed, and
 “ confined to the sick-berth. There are numerous
 “ diseases, when it is either improper for the pa-
 “ tient to use the ship’s diet, or when, from want
 “ of appetite, he dislikes it. A large allowance
 “ therefore goes to his messmates, which, if not
 “ devoured by them, has often been sold on shore
 “ to disadvantage. Now instead of this super-
 “ abundant allowance being given to a man whose
 “ appetite rejects it, or to his messmates, who may
 “ sell it for bad purposes, Captain Markham of the
 “ Centaur has been long in the habit of directing
 “ the purser to keep a book of credit for all such
 “ provisions, from a list daily furnished by the sur-
 “ geon, which credit goes to the use of the sick,
 “ and is converted into a fund for supplying live
 “ stock, whether sheep or poultry, porter, vegeta-
 “ bles, fruit, &c. when the ship goes to sea; from
 “ this also new bread is daily baked for the use of
 “ the whole*.

“ The ship’s company of the Centaur have most
 “ cordially entered into this benevolent measure
 “ of their Captain, and have justly made it their
 “ boast. My last communication from Mr. Wil-
 “ les, surgeon of the Centaur, mentions the mess
 “ fund at 70*l.* credit, which will supply the ave-

* The fund of a mess, well supported and encouraged in most ships, would even afford to keep a cow for the use of the sick, which would certainly be the first and greatest comfort that could be bestowed.

“ rage number of sick for twelve months, at a
 “ most liberal allowance. The present stock at
 “ sea consists of five prime wethers, twelve dozen
 “ of London porter and cyder, lemons and oranges,
 “ vegetables, pickles, eggs, &c.

“ Their Lordships may form some idea of the
 “ good to be expected from this plan being made
 “ general from the following example. When Cap-
 “ tain Buller, in the sickly condition of the Edgar
 “ last February, gave up his private stock to the
 “ sick and convalescents from the prevailing fever,
 “ it was remarked, that in the space of ten or four-
 “ teen days, the most debilitated cases were able
 “ to return to their duty. Upwards of fifty re-
 “ covered at sea in this manner, being the first and
 “ worst, and under all the disadvantages of bad
 “ weather.

“ When the Edgar came to port, she landed in
 “ all about 150 other cases; and after these had
 “ been from six to ten weeks at an hospital, only
 “ eighteen were returned to the ship. Many of
 “ the number were invalided, some of whom were
 “ afterwards seized by Captain Buller, whom he
 “ found in good health. Such are the defections
 “ of a ship’s company when, from deficient com-
 “ fort on board, they are sent on shore.

“ The plan of a sick mess, such as I have pro-
 “ posed in imitation of Captain Markham, must
 “ go a great way in preventing such misfortunes as
 “ are the consequence of sending men to hospitals.
 “ It interferes with no forms of office connected
 “ with any of the inferior boards, but leaves the
 “ people entirely in the management of their offi-
 “ cers, a circumstance I consider much in its favour.
 “ At the same time I am of opinion, that it could
 “ not be easily brought into general practice with-
 “ out the approbation and countenance of their
 “ Lordships. If a sick man can be done justice to

“ in his own ship, he certainly ought never to be
 “ sent out of her: but no article in the *materia me-*
 “ *dica* can make up for the want of fresh pro-
 “ visions.

“ In our humble endeavours to be useful, we
 “ have always had in view the value of establishing
 “ good precedents as a legacy to our successors.
 “ The present, I think, is one of them. The most
 “ expensive articles which cookery can devise,
 “ become small in point of cost if they can return
 “ a sick man to his ship, rather than allow him to
 “ remain a single hour at an hospital. A few dis-
 “ abled ships, with men at hospitals, subtract so
 “ much effective force from a fleet, as might, on
 “ some occasions, decide the fate of a battle.”

“ TO EVAN NEPEAN, ESQ.”

Mr. Nepean acknowledged this letter, and that he had communicated its contents to their Lordships.

To Lord St. Vincent, who had just assumed the command of the Channel squadron, I also recommended this form of a sick mess, but no disposition was manifested to assist in its completion. The last office of neglected representation is to record a good precedent for the benefit of posterity, which most willingly I do.

A book containing the quantity of the different articles purchased for the use of the sick mess, with the expenditure daily, is kept regular. The sheep, and all living stock, such as fowls, are under the direction of the captain's steward; the vegetables, eggs, &c. under the surgeon. Every thing is bought of the best quality. When any man is put upon the sick-list, requiring a diet which the ship cannot supply, he is put upon the sick mess, supplied with fresh provisions, his flour is made into
 . hot

hot rolls for tea, and his other provisions go to the credit of the sick mess. This credit is paid by the purser into the hands of the Captain, who is treasurer.

Some trifling sums of prize-money, too small for distribution, laid the first foundation for this charitable institution in the *Centaur*. I am happy to add, that a similar mess has been adopted in the *Princess Royal*, the flag-ship of Sir E. Gower, and in the *Impetueux*, commanded by Sir E. Pellew. In the *Princess Royal* the sum of thirty pounds was found on the decks which nobody would claim, and was devoted to this purpose; at the same time the ship's company readily acquiesced in establishing this plan of a sick mess.

Nov. 1801. To these ships I have now the pleasure to add the *Orion*, Captain Reynolds. Mr. T. Galloway, mate of the *Centaur*, was acting as surgeon, and strongly inculcated the fine example of his own ship. The officers contributed their mite, and all the crew entered into the measure. The *Courageux*, Captain Sotheby, by the exertions of Mr. Clifford, followed up a similar sick mess. These ships were of Sir Edward Pellew's squadron, and were no doubt much encouraged by the example of the gallant Commodore. The arrangement of a medicine chest, and a pompous *formula medicamentorum* are trash, compared with these comforts to a sea life!

Some future æra of naval service may perhaps see this institution honoured with Admiralty protection. In the meantime it deserves my encomium, as being best suited to the design of any thing that has ever come under my observation. The name of Markham will long be remembered with gratitude and affection in the navy for this invention, to comfort the bed of affliction, and to restore the

weak and languid convalescent to vigour and health *. *Sic Deus providebit !*

The following method of making soup at sea is one of the most economical inventions I have ever seen : it resembles the quality of Mrs. Melroe's, and shows to what necessity, amidst all our national splendour, an industrious navy surgeon is drove to find nourishment and comfort for his people when convalescent.

“ An instance has occurred to me of procuring
 “ a salutary and pleasant beverage for patients at
 “ sea ; that is, to preserve all the large marrow-
 “ bones on board when fresh beef is used in har-
 “ bour, putting them into a digester to separate
 “ the oily matter, which can be preserved by spices
 “ any length of time. A small portion of it, with
 “ a little barley or rice, and vegetables, boiled in
 “ water, makes a most pleasant soup, which I have
 “ found patients to relish exceedingly, preferring
 “ it much to the portable broth supplied to the
 “ navy.

“ WILLIAM BELL, *Surgeon.*”

Megara,
 28th July, 1800.

A sea life affords the strongest evidence to be found of mankind living for a length of time on a particular diet, without change, sometimes for years.

* This generous officer, when he left the Centaur, on his appointment to the Admiralty, gave twenty dozen of fine London porter, with other articles, as a present to the sick-berth.

together,

together, without either the appetite failing or the stomach rejecting it. I apprehend this is chiefly owing to the stimulus of the muriate of soda which preserves the beef and pork, and seems so grateful to the human stomach. Fresh beef and fresh pork are soon disliked, and produce nausea. I have more than once at sea been sick with the use of fresh pork, turtle, and poultry. Mr. Pritchard, a master in the navy, mentions an instance where the purser gave two fowls, each weighing three pounds, for a piece of beef. These were much relished at first, but were soon disliked by the seamen, who returned with pleasure to their salt meat. He also remembers when the late Lord Rodney ordered fresh pork to be supplied in 1769, of which the seamen soon tired, and refused to eat it. Captain Tregent of the marines relates the same of turtles used in King's ships, and similar effects have been observed by other officers. The crew of the *Ville de Paris* had so much fresh beef off Ushant last summer, that they longed to be put upon salted provisions.

MEDICINA NAUTICA.

NAUSEA MARINA, SEA-SICKNESS.

THE disease usually called sea-sickness, as it has seldom been fatal, seems to have little engaged the attention of the naval physician or surgeon. But as it is a very painful affection while it lasts, and tends to pave the way for other diseases, I have given it a place in this Volume.

Sea-sickness may be defined, a vertigo accompanied with nausea and vomiting, great listlessness of mind, and inaptitude to muscular exertion, for the most part occasioned by the motion of the ship.

The first sensations of its approach are, a slight quiver, or degree of tremor, and dizziness, with rather indistinct vision, that makes the patient rub his eyes as if something there had produced this effect; a very transient confusion of thought, as if from sudden alarm also is felt, and a kind of anxiety or sighing, not unlike what we perceive on going into a deep river, when the buoyancy of the water appears to raise us from the bottom.

Nausea

Nausea and vomiting often succeed these feelings; but sometimes the former continues without any effort to evacuate the contents of the stomach. As the vertigo increases the patient is in danger of falling on the deck, and catches the first post that he can lay hold of, and lies down. The horizontal posture he finds to alleviate his sufferings, and if he attempts to walk the giddiness and nausea return.

In some subjects, particularly in females, the vertigo is followed by such anxiety as to occasion syncope: the patient will frequently remain for some time in a state of insensibility. I have never seen or heard of convulsions from sea-sickness.

The free evacuation of the stomach by vomiting, can scarcely be said to give a respite to the disease, for the nausea and other painful feelings still remain; and all desire for food is suppressed, till debility and emaciation are the consequence of want of nourishment. The pulse is generally low, and less frequent than in health.

The most severe case of sea-sickness which ever came under my observation, was that of Mr. Berkenhout, a midshipman of the *Vengeance* in 1793, son of the late respected physician and philosopher. In a passage to and from the West Indies, he was almost a constant sufferer. At one time he was so reduced, that I despaired of his recovery, and he had frequent syncope; even in the finest weather he was affected more or less by the motion of the ship. This young gentleman, an only child, for whose welfare the affectionate father expressed such strong attachment and concern, in his admired letters on education, died, after I left the *Vengeance*, of the yellow fever, in another voyage to the West Indies. The prayer
of

of old Evander seems to have been exemplified in the fate of Dr. Berkenhout and his son :

At vos a ! Superi, et Divûm tu maxime rector
 Et patrias audite preces ; si numina vestra
 Incolumem Pallanta mihi, si fata reservant,
 Si visurus eum vivum, et venturus in unum ;
 Vitam oro : patiar quemvis durare laborem.
 Sin aliquem infandum casum, fortuna minaris ;
 Nunc ! ô nunc ! liceat crudelem abrumperé vitam
 Dum curæ ambigûæ, dum spes incerta futuri ;
 Dum te, care puer, mea sera et sola voluptas,
 Complexu teneo ; gravior ne nuncius aures
 Vulneret. —————

VIRG.

Some peculiar predisposition of body, it would appear, renders certain persons more liable than others to nausea marina. As far as my observations go, I think this consists in an irritable state of the nervous system, and where the stomach and intestines are easily affected from slight causes. The gouty constitution is of this kind ; all those persons who are usually said to be nervous, habits subject to dyspepsia and spasmodic affections of the stomach and bowels ; hence the fair sex, in making a passage or sea-voyage, are more frequent sufferers than men.

The duration of the disease, therefore, depends much upon the state of predisposition, as in some constitutions it is quickly got the better of, while in others it is permanent, or recurs from trifling causes.

I have known men who have been bred to a sea-life, always sick on first going to sea, after being a short time on shore ; on some the effect of the ship's motion is so strong, that constant sickness is the consequence.

The

The philosophy of this disease has been little understood till lately. It has now assumed a scientific form, and is ingeniously explained by Dr. Darwin in *Zoonomia*, Section XX. on Vertigo. On the following axiom he builds the superstructure of a curious theory: "In learning to walk we judge of the distances of objects which we approach by the eye; and by observing their perpendicularity determine our own*." The subject is aptly illustrated by facts taken from the common occurrences of life, as sailing in a ship, walking hoodwinked, standing on the summit of a tower or precipice, riding backwards in a coach, walking in a room hung with paper marked in the form of lozenges, riding in a plain covered with snow, &c.

There are few people that have not taken notice of circumstances of this kind: I have myself, from not being able to see houses on the opposite side of the street, when looking through a window, while the snow fell in large flakes, become vertiginous, and been obliged to turn from the window to preserve my perpendicularity. The dancers on the slack wire always fix their eye on some object, and if any thing is opposed between them and what they fix upon, they fall instantly.

In a large plain covered with snow, when it is too dark to perceive the track, it is very difficult to keep the road. This is curiously illustrated by the following story, which I have heard a friend of mine narrate with great humour, on the spot where it happened. A party of friends being on a visit to Mr. Davison of Lanton, in Northumberland, whose house stands on the bank of

* Vol. I. p. 227. First Edition.

the Glen, at the foot of the hill that skirts Millfield plain, on the south-west, lost their way about a mile from his house, after crossing the river, it being rather inclining to dark. They came to a farm-house call Yewart, quite in the opposite direction to where they ought to have gone, from whence they were served with a guide to conduct them to Lanton. They set out in full confidence of getting there in a half-hour; but after traversing a great deal of ground for an hour and a half, they returned to the very house they had left, not a little puzzled how they got there.—An old servant who had lived thirty years on the farm, laughed immoderately at the stupidity of their conductor, and volunteered to direct them safely, or forfeit any thing in case of failure. As Robin knew every step of the ground so well, they flattered themselves with the pleasure of supping with their worthy acquaintance, and out they sallied again. Robin amused the travellers with many adventures on Millfield plain resembling their own; but for his part he had never lost the way, he knew that he could go to any part of it blindfold. After travelling, as they supposed, a mile and a half, Robin assured them of being within three or four *tether's length* of the house: still no house appeared. They grew impatient, and rather alarmed; for the plain abounds with quagmires, and is half surrounded with rivers having steep banks. At length a light was seen at a distance, when Robin congratulated the party on their safety: but how great was the surprize! when on approaching the mansion, it proved to be the house they had left two hours before! I need scarcely add, that the travellers were thus obliged to remain where they were for the night, while Robin's pride was extremely hurt by the adventure.

adventure. On the same plain, when covered with snow, I have twice lost my way; but fortunately reached a house where I obtained a guide.

But it is not on land only that we err from a straight line, when the eye has no object to direct us. It is the same on the water in a thick fog, when there is no compass in the boat to steer by. I have frequently, even in Portsmouth harbour, returned to the ship I had left, after rowing about for some time, and when the coxswain found his skill as unavailing as Robin the farmer's servant among the snow*.

It is our experience of perpendicularity with objects, that explains why short-sighted people are more liable than others to vertigo, when looking down from a height. I am unfortunately among this number, and feel the effect at a very moderate distance from the ground; and if I look up to people on a great height, I feel immediately pains resembling a cramp, in the soles of my feet.—I refer the reader to Dr. Darwin for the explanation of this circumstance.

When we are surrounded with unusual motions, as in the librating of a ship, we lose our perpendicularity, and grow giddy; the sickness of stomach, &c. in consequence, Dr. Darwin accounts for from what he calls reverse sympathy, as explained in his doctrine of associated motions, which is one of the functions of the sensorium, according to his pathology. He therefore very properly calls sea-sickness *vomitio vertiginosa* †.

* Boats going from the ships at Spithead with the intention of steering for Portsmouth, have often found themselves at the Isle of Wight, which is the opposite shore.

† Zoonomia, Vol. II. Class IV. 3.

This theory certainly best explains the action of what has been found most useful in the treatment of persons labouring under that malady. It is a well-known fact, and familiar to sea-faring people, that sea-sickness finds relief by going on deck, as they say, to have the full benefit of pure air. But it is certainly on the organ of vision that the effect of change of scene acts, from the assurance of our own perpendicularity, by observing objects around us, such as the shore, if in sight of land, another ship in company, any of the masts in the ship where we sail; or by looking at the skies, the sun, moon, or stars. Every thing that strongly interests the mind, attracts uncommon attention, or rouses the active passions, also checks sea-sickness. I have seen it cured by unexpected good news; by the hopes of the chase turning out a prize; by the prospects of coming to action, or a gale of wind coming on; and, lastly, by drinking heartily.

It is almost in vain to prescribe to the condition of the stomach in this disease; for, as that organ is only secondarily affected, clearing it by a gentle emetic, or trying to fortify it by what have been called tonics, are unavailing attempts.

A person subject to sea-sickness ought, at first, to keep much on deck, to go below for only a short time, till familiarized gradually with the motion of the ship. Some employment that requires some activity of body and mind, is the best way of passing the time. If the person has any turn for mechanics this might be easily turned into a method of cure; even assisting in the labour of the ship might be of advantage. The faculties being always depressed by sea-sickness, study is the last occupation that ought to be sought after.

In

In all cruizes or voyages which I have made, and as far as my inquiries go, I have never known abortion happen from sea-sickness; yet I have observed women of the better and lower orders of life, experience the most painful sufferings from nausea marina, in all the different stages of pregnancy. The child, in these cases, was always born at the full time, living, and in perfect health: so bountiful is Nature in providing for the safety of the offspring *!

Having just mentioned above the effect of drinking heartily, in staying sea-sickness, a fact so common at sea, that the seamen always recommend *stiff grog*, I beg leave to illustrate the practice by the following anecdote.—Some time lately, when travelling between Exeter and Plymouth with Captain Kelly of the navy, a lady in the coach grew remarkably pale, uneasy, and sick.

• On mentioning this circumstance to my friend Dr. Thomas Stewart of the Prince Frederick, he put the following aphorism of Dr. Denham into my hands: “ Women seldom abort while they have the vomiting which usually attends early pregnancy.” P. 71. During the war it has been much the practice to carry a number of the most orderly married women to sea with their husbands. Many of these have lain in on board; a commodious apartment being always fitted up for the purpose; where the puerperal female has such comforts as scarcely to be met with in any lying-in-hospital in England. I have known five births in the space of a month in a single ship: had the poor women been left to other charities, it is probable many of both mothers and infants must have perished. Our surgeons, by these means, have had a larger practice in midwifery, than falls to the share of some accoucheurs on land; and have in all these cases acquitted themselves with ability and success. It is surprizing to see the number of fine children that have been born on board. The officers, and ship’s company, on these occasions, make subscriptions for the mother and infant, which always much exceed what is required; and often enables the husband to send his wife home in a stage-coach.

She was moved into the most commodious seat, and the Captain, with the usual frank openness of his profession, endeavoured to cheer her up, partly with his lively sallies, and also by assuring her that he possessed a certain cure for sickness in either a ship or coach, which he would procure for her at the next inn. In due time we arrived at the inn, where breakfast was prepared, but the poor lady was unable to eat any thing. The Captain had made up his mind on his patient's case; he acted the part of a discerning physician, as well as the accomplished officer, for he knew what would suit her constitution. He called for a bumper of the best brandy, inflamed it so as to warm it sufficiently, and, calling for a hard biscuit, he desired the lady to take them together, which was done, with an instant alleviation of symptoms. The lady bore the remainder of the journey in perfect good health and spirits, being on a visit to her paramour at Stonehouse barracks, and the Captain, from the speedy effect of his medicine, continued to repose the same confidence in it which he had done from long experience of its efficacy in a sea-life *.

August 20th, 1801. Plymouth Dock.

* I have known this remedy check vomiting when every thing else had been tried in vain; even when singultus attended.

MEDICINA NAUTICA.

MALIGNANT ULCER.

IN my second Volume was given the history of a particular kind of ulcer; to which, from its early symptoms, rapid progress, and difficulty of cure, I was induced to assign the name of *Malignant Ulcer*. The name and definition of a disease are perhaps of more importance than is generally thought. They are like a central point to which all converging rays tend: they direct future inquirers how to compare facts, and become, as it were, the base on which accumulating knowledge is to be heaped.

The appearance of this ulcer is new in the Channel; and from what I am able to collect, was not known in any ship in the home-seas before the present war. It has however become a formidable disease; and has so little yielded to particular modes of treatment, that we have still to lament its ravages, and to confess that we are ignorant of its certain remedies. In the West and East Indies, this, or an ulcer very nearly allied to it, was frequently observed in ships during the last and for-

mer wars. But Dr. Gillespie is the first who had given any accurate account of it, as he met with it in some of the hospitals in the West Indies. In the ships of the Mediterranean it has been very common; but little attention has been directed to the investigation of its causes; so that its history on that station is almost lost.—With respect to its contagious nature, as asserted by some, I do not mean to enter into any dispute. I have not seen or heard any thing that can intitle it to the term infectious; and to admit this as a part of its history, is at once to stifle inquiry.

As the Malignant Ulcer has appeared in the Channel, it is to be considered rather a disease of the harbour than of long cruizes. It is chiefly liable to affect men who have returned lately from warm climates; and I have a suspicion that a long and excessive use of spirituous liquors most frequently precedes its appearance. There is a misfortune attends the victualling of the navy in the West and East Indies and Mediterranean, that could not be easily remedied; this is the allowance of grog. Some improvement has been made in procuring older rum, and perhaps also of a better quality; but it is the spirit itself that is hurtful; and half a pint of rum or brandy, however diluted, used with a diet of salted meat, continued for years, besides the frequent excesses of the shore, and all these while the body is exposed to a burning atmosphere, cannot fail of making impressions on a constitution, that call forth new dispositions in the character of its diseases. Such a mode of life is not natural to human beings; it must therefore produce disorders that depend upon the long action of inordinate stimuli, and bear no resemblance to what is observed in the common occurrences of life:
such

such I conceive to be the beginning, progress, and issue of the malignant ulcer.

If there is any certainty in the causes which I have assigned, as producing some peculiarity of habit on which this ulcer depends, it in some measure accounts for the little effect which all topical dressings and applications have had in the cure.

When a disease like the one in question, which has usually appeared in a warm country only, comes to shew itself in a cold climate, it is reasonable to conclude that there must be some similarity in the causes which produce it, in both situations. The seaman in the Channel station, when in port, and for a few weeks after going to sea, is allowed a very wholesome beer; but whenever it can be obtained, he swallows, with extraordinary greediness, enormous quantities of spirit*. The houses to which our men resort cannot be thought of but with horror: he is there plied with the poison, till he sinks on the floor, and a few minutes is often the time taken to complete the dose. This is not like a person that, though he may drink a great deal in the end, is slow and deliberate in gulping it down: hence the frequent deaths, in a state of intoxication, which we daily meet with. If the body suffers a diminution in its excitement between the West Indies and Ply-

* In the year 1795, Earl Howe and Sir Roger Curtis, on my representation, took much pains to convince the Victualling Board of the salutary effects that might be expected, by allowing the seamen, when at sea, beer of a greater strength, with more hops, in order to preserve it, and to abolish the use of spirit. No additional expence could have been incurred, for the quantity might have been diminished. This proposal, like many others, fell to the ground; it was condemned without being tried.

mouth Dock; with all deference to the *licensing magistrates*, the landlord has in his possession what can quickly stimulate beyond solar influence.

I am thus disposed to think, that there are constitutional peculiarities to be explored for the production of this ulcer, and that the cure is to be conducted by obtaining and correcting them. These perhaps depend upon circumstances that are slow in their operation, and that cannot easily be commanded in naval service; yet, nevertheless, the subject ought not to be abandoned, for it is our duty to persevere.

In the summer of 1799, the malignant ulcer made its appearance on board the *Temeraire*, with all the characteristic symptoms and virulence which marked it in other ships. Every wound, abrasion of the cuticle, blistered part, scald, or burn, passed rapidly through the various stages of inflammation, gangrene, and sphacelus; in a few days leaving the bones almost bare from the separation of immense sloughs. Mr. Burd succeeded Mr. Lloyd in this ship, and though many had been sent on shore, he found a full sick-berth, and most of the cases did well in time, some of whom suffered large exfoliations of bone.

The tendency of the bone to *caries*, after inflammation in this disease, has been more frequent, than in any other species of ulcer. It has been chiefly observed in the tibia, but also in some of the bones of the face. These bones being superficial, the periosteum is from contiguity affected by the inflammation; and with it also the blood-vessels which enter the bone partake of the affection, slough, and leave a portion of the osseous substance

substance without the supply of blood; and thus the external lamina become carious, decay, and exfoliate. This has in many cases rendered the cure very tedious and painful; and many have sunk under the long confinement.

The Temeraire had been lately commissioned when the ulcers first appeared: the crew were composed of men that had just returned from foreign stations; and from having some years wages to receive, they plunged as usual into all the excesses of drinking.

In our former Volume, the Terrible was mentioned among the ships affected with this sore; the remains of it were but too apparent in the summer of 1800; nor was it completely extirpated till Mr. Mant joined that ship, and made new arrangements in the sick-berth.

In the Warrior also, in the summer of 1800, it made a formidable appearance; but fortunately did not extend so far as might have been expected. At one of my visits I ordered sixteen cases to be sent on shore, who were deriving no benefit from all the methods of treatment and dressing that could be devised.

There was at one time a disposition to this fore in the sick-berth of the *Barfleur*; which, by great attention on the part of Mr. Lloyd, was overcome, and the ulcers did well.

In order to render the history of this ulcer as full as possible, I shall subjoin the details of several surgeons, beginning with the Amethyst, under the care of Mr. Edwards, whose reflections on the subject are worthy of an attentive perusal. This ulcer commenced in the winter of 1800-1, and extended to about thirty cases before it disappeared.

“ I am sorry to say that the malignant ulcer so
“ accurately described in your very valuable pub-
H h 4 “ lications,

“ lications, raged with irresistible impetuosity.
“ Two patients died; one of whom about twelve
“ months ago was afflicted with a bad fever, and
“ had never regained a healthy appearance; the
“ other was a hard drinking old man, and about
“ two years since was confined to his bed near four
“ months with an extensive ulcer on the same leg;
“ he was at that time a prisoner in France, and had
“ been subject to intermittent fever ever since: he
“ frequently has had sores on his leg since, but
“ they always healed without much trouble. He
“ received this last hurt the day before we sailed,
“ but it was so trifling that he did not apply for
“ some days: when he first came down, it had the
“ incipient characteristic of the ulcer: in three
“ days, the sphacelating stage commenced; in eight,
“ the tibia was bare from the knee to the ankle.
“ After which he began to do well; but in a few
“ days the whole of the foot inflamed, sphacelated;
“ he languished eleven days, and died.

“ Two only came on in the form of a small pim-
“ ple; in these the fever was violent in its com-
“ mencement: I gave an emetic to clear the sto-
“ mach, afterwards a large dose of calomel and
“ salts the next morning, then small doses of anti-
“ monial powder and calomel, with a purge every
“ second day. As soon as the stomach would bear
“ the bark, I gave it along with wine and nourish-
“ ing food, the patients’ debilitated state requiring
“ it oftener than, I am sorry to say, was in my
“ power to give them. Had they not been sup-
“ plied from the captain and officers’ tables, most
“ of them must inevitably have died.

“ The topical application I made use of in the
“ commencement was a solution of sal ammoniac in
“ vinegar: when they began to sphacelate, I applied
“ mild dressings on the surface, and cloths dipped
“ in

“ in the solution over the whole ; these were re-
“ newed every two hours, and the grumous dis-
“ charge washed off with warm water. I find the
“ patients relieved by removing the gangrenous
“ part when it is perfectly formed ; they get rid of
“ the intolerable stench a day or two sooner by it.
“ After it was completely cleared, the dressings I
“ made use of were various, as circumstances re-
“ quired. One patient totally lost the tendo achil-
“ lis ; it was nearly healed, but within these few
“ days the sore began to spread, and continues
“ spreading at this day, but without fever attend-
“ ing it.

“ The first sores of this kind I ever saw, was in
“ November 1793 ; I was then on board the Bri-
“ tannia ; they appeared on board some other ships
“ in the fleet prior to our having any. After va-
“ rious modes had been tried, Mr. Stokoe applied
“ cataplasms of salt water and oat-meal, renewed
“ about four times a day ; it was fancied to have
“ some good effect : during the time I remained in
“ the Mediterranean, having to treat a great many
“ of these ulcers, I applied the cataplasm, (and
“ have used it since frequently,) but without an-
“ swering my expectation.

“ During this cruise in the Amethyst, I per-
“ sisted in applying the nitrous vapour in several
“ cases. I think that it never induced a change in
“ the discharge of the ulcer, nor was there a single
“ instance where the bad smell was not as into-
“ lerable as ever in two hours after it had been ap-
“ plied ; but I believe that it had some good effect
“ in counteracting the bad smell of the bed-clothes.
“ From every information that I have been able to
“ collect on this subject, and my own observation,
“ these sores have constantly broke out after the
“ people have been living in harbour on fresh
“ meat

“ to perform quarantine for several days, which
 “ deprived these poor men, (who had for months
 “ laboured under one of the most afflicting of dis-
 “ eases, the malignant ulcer, although in a reco-
 “ vering state, yet were debilitated to an extreme
 “ degree,) of the advantage of being immediately
 “ removed to a place where they would be sup-
 “ plied with proper diet, wholesome air, and the
 “ ablest medical advice. I am sorry to say, that
 “ they were kept on board a ship crowded with
 “ prisoners, shipwrights, and women, for seven
 “ days.

“ This subject of quarantine is worthy of the
 “ consideration of the legislature ; his Majesty’s
 “ service is often retarded by it, and even in the
 “ present instance, every humane mind must feel
 “ for the distress of these poor fellows. *

“ Annexed is a statement of health during our
 “ cruise. In my last there were three venereal
 “ patients on the list, one of whom I did not con-
 “ sider as having any venereal taint, but the con-
 “ sequence of a large buboe in the groin. He had
 “ made use of a sufficient quantity of mercury, and
 “ had left it off for some days. After an absence
 “ of few hours I was surprised to find him attacked
 “ with shiverings and heat alternately, headach and
 “ vomiting, and violent pain in his groin ; the ul-
 “ cer was nearly healed, but I found the edges in-
 “ flamed and a disposition to slough. He took
 “ an emetic immediately, and two hours after the
 “ operation was over, seven grains of calomel, and
 “ the next morning cathartic mixture ; a warm ca-
 “ taplasm was applied to the sore, which was re-
 “ newed frequently. The second day he took the

* This subject has not been forgot by us. *Vide* the Occur-
 rences, T. T.

“ same

“ same medicines again ; the vomiting and headach
“ was abated, but the ulcer spread rapidly, with
“ a grumous offensive discharge, and every ap-
“ pearance of malignancy. It sloughed very deep,
“ and he was sent to the hospital about the time
“ the sloughing stage was nearly over. Now this
“ patient being attacked with this sore at this time,
“ convinces me that there was not any syphilitic
“ taint remaining; for, whilst he laboured under that
“ disease, and made use of the specific remedy, al-
“ though the ulcer was extensive, it healed kindly ;
“ and besides, there had been in the course of the
“ cruize several that had large venereal ulcers, yet
“ not one degenerated into the sore that was then
“ so troublesome in the ship: this is a great proof
“ that, when the constitution is influenced by a
“ specific disease, it is not so liable, or not at all
“ liable, to be attacked with this disease.

“ In the commencement of the cruize, we had
“ several ulcers, for the most part proceeding from
“ hurts ; but there were some that made their ap-
“ pearance in the form of a pimple, with circum-
“ scribed redness, attended with fever and constant
“ vomiting. Some of these patients were strong
“ and healthy, others more or less emaciated.
“ whether it was from the plan of practice I firmly
“ pursued, or whether the virulence of the poison
“ was in some measure abated, those ulcers pro-
“ duced from abscess were more manageable than
“ during our last cruize. The men applied im-
“ mediately on the first symptoms ; I bled accord-
“ ing to the strength of the patient, and gave large
“ doses of calomel at night, and salts the next
“ morning ; this was repeated three or four days
“ successively : to the part afflicted a strong solu-
“ tion of sal ammoniac and sugar of lead in vinegar
“ was applied: almost every one treated in this
“ manner

“ manner ulcerated, but they did not spread much ;
“ the surface of the fore was covered with mild dres-
“ sing, and a thick compress moistened in the so-
“ lution kept constantly to the part as long as any
“ inflammation remained. I am inclined to believe
“ what you recommend, Sir, that scarifying the
“ parts would be of great service, yet I am afraid
“ to put it in practice, for the slightest scratch is
“ apt to degenerate into sores extremely tedious in
“ healing ; and during our last voyage, when the
“ ulcers did heal, it was not in the manner of com-
“ mon sores, but by forming scales.

“ We lost one good man from mortification, in
“ consequence of an extensive ulcer on the leg ;
“ he had often been bad before, but said that it al-
“ ways healed rapidly : he was ordered to bed di-
“ rectly, mild dressings applied, with the solution
“ over it, and took calomel and cathartic mixture
“ three times : in fourteen days it was cicatrized,
“ except one small part which remained stationary
“ for five or six days ; when he was attacked with
“ violent shivering, he had two doses of calomel,
“ and the following day a purge : the appearance
“ in the bottom of the sore a dark brown, the
“ edges inflamed and jagged ; its course was
“ very rapid, for in three days nearly the whole of
“ the tibia was exposed ; it looked well for one day
“ only, when the edges became flabby, and put
“ on a glassy appearance. I immediately gave bark
“ in wine in as large doses as he could retain on
“ his stomach : the whole glassy appearance ex-
“ tended, and the whole surface became flabby,
“ and the knee swelled to an enormous size. He
“ languished a few days, and died. I was appre-
“ hensive from the attack of rigors, that it would
“ end fatally, for they came on with such violence.
“ Perhaps if amputation had been performed imme-
“ diately,

“diately, he might have survived : it would have
“been difficult to have persuaded him to undergo
“the operation, for the sore was but small (at the
“commencement of the rigors), and he thought that
“it was only an attack of the ague, to which he had
“been subject; besides we were out of reach of fresh
“provisions and vegetables, and likely to remain
“at sea three or four months : independent of this
“consideration, I have seldom seen amputation in
“malignant ulcers where the stump has not been
“seized with the same kind of sore, even at the
“distance of six or eight months after the opera-
“tion.

“We had a greater number of sore fingers this
“cruise than I ever remember to have seen before.
“They all partook more or less of the same dis-
“ease : two of our best men lost a finger each ;
“the whole of the muscles sphacelated from the
“first joint to the metacarpal bone, where for-
“tunately the progress was stopped. On our ar-
“rival in port, we had only one object for the hos-
“pital ; this was from a wound and contusion of
“the ankle ; it ran the common course of the dis-
“ease, and was nearly healed when sent on shore,
“but the joint is diseased.

“The patients that died were abandoned de-
“bauched characters, that took every opportunity
“of drinking ; and even where the greatest vigi-
“lance and strictest attention is paid, sailors will
“get drunk in harbour. Although four months at
“sea, our people were in very good order : in the
“course of the last month we had several trifling
“accidents, but after we had been at sea about two
“months, the virulence of the disease seemed to
“be abated, which, in some measure, proves that
“it must be produced by a sudden change of diet,
“as well as from excess in drinking : to people
“not

“ not accustomed to behold the galleys of king’s
 “ ships, it would be almost incredible the quantity of
 “ meat that is daily dressed. I can see no remedy for
 “ this, nor do I suppose that it is of any very great
 “ consequence, provided there was no excess in
 “ drinking, for from that and bad liquor, more
 “ than half the complaints we meet with on board
 “ ships proceeds.

“ I hope to see some further light thrown on
 “ this subject of malignant ulcers. From your
 “ own extensive observations, Sir, and of those of
 “ your correspondents, I expect great information.
 “ My good friend, Mr. Stokoe (of Hexham),
 “ whose remarks on this subject must be as valua-
 “ ble as they are extensive, will, I hope, favour us
 “ through your medium (if he does not intend to
 “ publish himself,) with some important commu-
 “ nications.

“ I am, Sir,

“ With much obligation for information

“ received from your works, &c.

“ Your most obedient servant,

“ EVAN EDWARDS.”

In the San Josef, fitted at Plymouth in January 1801, to bear the flag of Lord Nelson, this ulcer soon began to make its appearance. In February Mr. Walker mentions four cases being sent to the hospital. “ Four were sent to the hospital with
 “ very ill-conditioned ulcers, and those remaining
 “ on board (seven) have not the most favourable
 “ appearance.” In the succeeding month he re-
 marks, “ The number of ulcers has increased (13);
 “ two were sent to the hospital; again; others
 “ nearly

“ nearly cicatrized have broke out afresh. This
 “ ulcer has all the appearance and symptoms of the
 “ malignant ulcer that has of late infested the
 “ Channel fleet. It does not seem quite so rapid
 “ in its progress, nor are the symptoms so violent.”
 In April the list of ulcers still increased (23).
 “ Our ulcers increase, and begin to assume a for-
 “ midable appearance. Every bruise, wound, or
 “ scald, in the course of a few days put on the ap-
 “ pearance of the malignant ulcer, and go through
 “ its different stages, attended with little or no fe-
 “ ver. It seems to be highly contagious; the
 “ worst cases I have put by themselves; I cannot
 “ trace its introduction into this ship.”

From this very hasty account of Mr. Walker's, which Captain Wolfeley ordered me to be furnished with, it is plain that a disposition to malignancy appeared so early as February. It is to be remembered in the history of this ulcer, that the San Josef was manned from the Audacious and Namur; both of which ships had lately returned from the Mediterranean, where they had been for four years. The men had abundance of money; and, while in port, had indulged in the excess of spirituous potation, which the newly licensed gin-shops of Plymouth Dock could so amply supply. In such constitutions I conceive this ulcer to be most frequent: the reason therefore of its appearing among a number of men is, because their habits of life are nearly alike; and similar causes must produce similar affections, as mentioned more at large in my preceding volume, when treating this subject.

A change took place, in the month of May, between the surgeons of the Neptune and San Josef; and Dr. Felix describes the situation of his sick-berth in the following manner: “ You will
 “ perceive that I have no great reason to congrate-
 “ tulate

“ tulate myself on the exchange, at least for the
 “ present. I found not less than *forty ulcers* on
 “ board the San Josef, of the most unfavourable,
 “ if not of the most malignant nature, that ever
 “ came under my observation. Upon inquiry of
 “ the mates, I found that a disposition to this sore
 “ had prevailed for several months; that the most
 “ trivial hurt on the extremities, or even the
 “ smallest wound, became, in forty-eight hours,
 “ an ulcer of the worst description; and that
 “ no means could stop its spreading and slough-
 “ ing for several days. Latterly a contusion
 “ or blow on the leg, &c. produced the same
 “ appearance *; and I observed in one man of
 “ the name of Henderson, an ulcer that had de-
 “ voured the one side of his face, which had fol-
 “ lowed a blow on the ear, that was attended with
 “ a very slight wound. In two men the entire
 “ muscles of the leg were sphacelated, and the
 “ disposition to spread still manifest; in another
 “ man the foot was in the same condition; in two
 “ or three the tibia bare and exfoliating; and in
 “ many the same process was to be expected.”

We can hardly suppose a sick-berth to be in a
 more distressed state, than what Dr. Felix de-
 scribes. A ship affords such few conveniences for
 the accommodation of surgical cases, requiring
 the utmost attention to dressing, cleanliness, &c.
 that seven of the worst were sent to port; but
 Dr. Felix thought that twenty at least ought to
 have been sent in. In the month of June only

* Dr. Felix here says, a “ contusion or blow produced the
 “ same appearance!” Is it not evident from this, that the
 disposition to the disease lurked in the habit, and was only
 called into action by the inflammation which succeeded the
 contusion?

eight fresh cases were put on the list; and not less than twenty-five were cured on board, by indefatigable attention. Towards the latter stage he thought much benefit was derived from the arg. nitr. in solution; sympathetic buboes appeared soon after, and the ulcer healed. Seven objects for the hospital were still in the sick-berth. Dr. Felix adds, that the description given in Vol. II. by Dr. Browne of the Royal Sovereign, and Mr. Moffat of the Triumph, exactly corresponds with the sore infesting the San Josef.—*Vide* Vol. II.

The San Josef arrived in Cawsand-Bay on the twelfth of August. Her condition was now so improved, that only three cases of ulcer appeared objects for the hospital, in which the cure was likely to be tedious from a carious bone. On the whole, this disease was not so malignant in its nature, as we have seen it in some other ships; but great credit was due to Dr. Felix for his exertions. Captain Wolfeley, who paid much attention to this afflicting complaint among his people, in a letter to me blames much the excesses from spirituous liquors in Hamoaze; and very justly complains also of deficient medical assistance in the surgeon's mates, the San Josef not having half her complement. The crew came chiefly from the Namur and Audacious, both of which had been long in the Mediterranean.

Mr. Jarvis, surgeon of the Indefatigable, in a letter dated the fifth of July 1801, observes, that no communications from the Mediterranean respecting the health of the fleets employed on that station have been inserted in the two former Volumes of this work. His letter is very long; and, if detailed, would occupy a large space; I have therefore thought it better to give a sketch of his valuable observations.

He

He says, that after the celebrated battle of the Nile, several malignant ulcers made their appearance in the Culloden, of which ship he was then surgeon, that generally arose from very slight scratches, scalds, or wounds, and some from boils or small pimples, all of which resisted every method of treatment that he put in practice. If the pimple or boil were seated on the lower extremity, it was very inert and slow in suppurating, although cataplasms, &c. were applied; and after the dead cellular substance or core appeared through the cuticle, several days elapsed before the slough was separated. When the slough was thrown off the edges in some became ragged, in others quite callous and horny, and when this last separated, the ulcer was much extended in size. Absorption took place from several of the ulcers, and produced considerable turgescency of the lymphatic vessels. In some cases, when the ulcer began to heal, another boil appeared in its vicinity, which sometimes suppurated and formed a second ulcer more malignant than the first; but the boil more frequently disappeared, the original ulcer began to discharge again, and pass through all its stages with symptoms of augmented virulence. Escharotics and stimulating ointments were made use of when the ulcers first appeared; but as it was supposed that they increased the susceptibility for absorption, dressings of a milder nature were afterwards used. He says, it appeared to him that the system was struggling to be freed from something highly noxious and hostile to its healthy action, and that he at last left the treatment to nature.

When the ulcers attacked the knee or other parts thinly covered with cellular substance, the slough was generally so deep as to destroy part of a tendon or muscle, and to injure their motion. One

patient had an ulcer seated between the tendons of the ham, which was at length healed, but the tendons were contracted, and the motion of the joint entirely lost. Another had a similar ulcer, which was so irritable and painful that he could not suffer it to be dressed; he became dyspeptic, his stomach rejected every thing he took, and after lingering a month in the utmost agony he died. Another patient was attacked with inflammation on his shin, which proceeded to suppuration in spite of leeches, cathartics, &c. When the abscess was opened the tibia and fibula were found to be carious, and in a few days the man became weak and much emaciated. Soon afterwards a large abscess formed above the knee, and it is extraordinary that no previous pain was felt, nor inflammation observed in the part. It had been hinted to him a few days before, that it would probably be necessary to resort to amputation, which he was unwilling to comply with; but when he saw the abscess he solicited to have the operation performed;—a circumstance that created some embarrassment in Mr. Jarvis, for the abscess ran so far up the thigh, that the stump must necessarily be very short. As his strength was however declining rapidly, the operation was resolved on and performed above the seat of the abscess. The muscles were found to be so flaccid as scarcely to resist the knife. The stump was healing, and the patient recovering his strength and spirits, when he was sent to the naval hospital at Port Mahon, where he was soon cured.

The following account was sent me by Mr. Caird of the Prince of Wales; it having been written by Mr. Alexander M'Dowal, surgeon's first mate of that ship.

“ On

“ On the 11th April 1800 we received on
 “ board his Majesty’s ship Prince of Wales a
 “ number of bad cases of ulcer from Martinique
 “ hospital, where many were labouring under
 “ that complaint in the worst stages.

“ From this period, to us unfortunate, as it was
 “ peculiarly distressing to the miserable sufferers,
 “ every, even the slightest scratch or hurt, in what-
 “ ever manner inflicted, degenerated into a bad
 “ ulcer. The soldiers of the forty-third, who came
 “ on board at that time, were not exempt; and so
 “ alarming was its progress, that on our arrival in
 “ the Downs fifty-six were on the list of ulcer:
 “ mostly bad cases.

“ That it was highly infectious appears pretty
 “ clearly proved from the following circum-
 “ stances;—of the fifty-six who were attacked,
 “ forty-five were sent to the Royal Hospital,
 “ Deal, the others remained on board; and the
 “ temporary sick-bay, in which they had been
 “ heretofore, being pulled down, they were put
 “ into the old bay on the opposite side; which
 “ was previously well washed, sprinkled with
 “ vinegar, and every mode of purification usually
 “ adopted was employed; but above all, clean-
 “ liness was particularly attended to.—The dres-
 “ sings were frequently and speedily removed.
 “ The bandages, trowsers, &c. which had the
 “ least chance of retaining the noxious miasma,
 “ were either destroyed or well washed and aired.
 “ The consequence was, that the *few* cases that
 “ remained on board soon got well, by the same
 “ treatment and regimen (water only excepted,
 “ of which we got a fresh supply); and, what is
 “ still more remarkable, several of these were toe-
 “ nail cases, which we always found more obsti-
 “ nate. And I here beg leave to remark, that

“ the ceruff. acitat. sprinkled over the ulcerated
“ toe, was very rarely found to fail of success,
“ What still more confirms the opinion of its
“ being infectious, several people who had cuts
“ and scalds, on applying, had cerate and lint
“ given them to dress them below; and *all* those
“ healed in the usual manner.

“ The infectious ulcer assumed various appear-
“ ances in the different stages of the complaint;
“ but, in general, after a slight hurt, scratch, or
“ wound, an erysepelalous kind of inflammation
“ surrounded the injured part; and, in the course
“ of a few hours, a small vesicle containing a
“ brownish-coloured fluid was observed; on this
“ being evacuated, a brown puncture appeared
“ nearly on the centre of the above-mentioned
“ vesicle, which discharged a thin acrimonious
“ serum: this morbid point spread rapidly; febrile
“ symptoms generally accompanied this stage;
“ frequently delirium. The edges were reverted
“ and painful; the sore of a brown colour, and
“ covered with a deep, tough, fibrous slough;
“ the discharge thin and acrimonious, sometimes
“ destroying the surrounding cuticle. In a few
“ days the depascent stage seemed stationary; and
“ a healthy action was just perceptible, by the
“ slough becoming detached from the edges of
“ the sore: in two or more days the slough was
“ commonly cast off, leaving the sore perfectly
“ clean, with a fine healthy granulating appear-
“ ance. Things proceeded in this manner for
“ some time, in some instances till the sore was half
“ or more healed up; tantalizing us with the hopes
“ of a speedy cure, when a small part of the
“ granulating surface, mostly near the cicatrice
“ put on a crimson redness, in the centre of which
“ a dark-coloured speck made its appearance;
“ and

“ and spreading rapidly as before, over the whole
 “ formerly ulcerated surface, and often twice as
 “ much of the surrounding sound parts became
 “ a prey to its devouring influence.

“ In the course of this stage of the disease, its
 “ appearance was singularly striking. The destroy-
 “ ing power of the infection spread regularly from
 “ one side of the sore to the other, in a uniform and
 “ well-defined line, resembling the annexed



“ Hæmorrhage in the more advanced stages of
 “ the disease was a very frequent and troublesome
 “ symptom ; and, as far as I could observe, best
 “ relieved by the application of cold water over a
 “ simple dressing.

“ The fœtor was peculiar and extremely offen-
 “ sive ; to correct which the air was kept highly
 “ charged with nitrous gas, especially during the
 “ time of dressing: the only effect I ever could
 “ observe from the exposure of the ulcers to this
 “ gas, was a slight additional degree of pain, pro-
 “ bably from the precipitation of its chemical
 “ combination with atmospheric air. The cor-
 “ rection of the fœtor may in part probably be at-
 “ tributed to the same cause, operating strongly on
 “ the olfactory nerves ; lavender-water and other
 “ perfumes are scarcely perceptible during the
 “ fumigation with nitrous gas. As this is merely
 “ hypothetical, I beg leave to refer it to your
 “ better judgment.

“ In several cases the denuded muscles were
“ amazingly enlarged and diseased throughout
“ their whole extent ; resembling an oblong blad-
“ der, the outer membrane being of a pale white
“ colour, and full of a thin whey-coloured liquid,
“ which issued out in considerable quantity on its
“ being punctured or cut into.

“ In one instance, in which the fore was induced,
“ by a drop of boiling pitch falling on the ante-
“ rior and lower part of the leg, but degenerated
“ into a foul extensive ulcer, in the manner afore-
“ said, in spite of the unremitting attention of
“ Mr. Chivers the surgeon, in assiduously admi-
“ nistering the remedies usually employed, viz.
“ cinchona, lime-juice, wine, and a light nutri-
“ tious vegetable diet ; slight evacuations, with
“ emolient poultices and fomentations, in the
“ first stage ; and spirituous embrocations were
“ employed latterly, with a full allowance of nu-
“ tritious regimen, and an increased proportion of
“ sound port-wine at intervals through the day.
“ The fore, by repeated depascent stages, occupied
“ one-third the extent of the tibia, and more than
“ one-half the circumference of the leg. The
“ tibialis anticus muscle appeared in the middle
“ of the fore, in the form already mentioned,
“ entirely detached, only at the superior and
“ inferior edges of the fore ; where it stretched
“ toward its origin above, and insertion below.
“ A probe being passed under it, and gently
“ raised up, the entire remains of the muscle from
“ its origin to its insertion, came away without
“ pain, the patient feeling, according to his own
“ expression, only a creeping sensation along the
“ bone. The muscle appeared in a dissolved state,
“ and consisted chiefly of longitudinal fibres,
“ loosely connected by a vascular substance, full
“ of a whey-coloured fluid.”

The

The Prince of Wales was the flag-ship of Sir Robert Calder, Bart. and sailed for the West Indies with six others, on the third of February 1801, in quest of a French squadron that escaped from Brest a few weeks before. After touching at the different islands, they returned to England about the beginning of June. It would appear that a disposition to this ulcer had never been completely subdued in the Prince of Wales; and it was probably increased in this trip to the southward; for a number of bad cases were sent to Haslar hospital on the ship's arrival at Spithead. It had all the characteristic symptoms of the ulcer which Mr. Caird met with in the Queen Charlotte some years ago, which is described in our second Volume. This ulcer continued, though to no great extent, during the summer; one amputation was necessary, before the patient could be sent on shore; and some other cases were landed at Plymouth in October.

In the preceding narrative Mr. McDowal speaks of the infectious nature of this ulcer. This language has been employed by others, and is an easy way to get quit of a difficult question. To these arguments I formerly replied. Inoculation, I have no doubt, might engraft a disposition to this gangrenous ulceration in another person; but the slightest scratches are so often mentioned as giving the first notice of its presence, that it is impossible to conjecture how it could be communicated to them; these little ailments having never brought them to the sick-berth. But a disposition of body, obtained by peculiar diet, and modes of living, explains the fact without having recourse to any occult causes. I have particularly blamed the use of ardent spirits in great quantities, or when long used. The stimulus of ardent spirit

I

in

in certain constitutions, covers the face, nose, &c. with red and irritable spots and eruptions. It taints the fluids, impregnates them with foetid hydroge-nous gas, which exhales from the lungs, and is known by its bad smell. It excites to excess the moving fibres, and disposes them to gangrene with more rapidity than any other ordinary stimuli, being only surpassed by the actual cautery, certain poisons of an animal, vegetable, and chemical nature and electricity. The spirit which has been served in the navy this war is of the most fiery and inflammatory nature; the quality of it is not attended to; all that the victualling department considers necessary is, to measure its strength that it may bear the proportion of water in making it into grog. Whether in a cold or warm climate therefore the effect of this unnatural stimulus will depend much on the length of time it has been used, and assisted by other exciting powers. But it would appear from any treatment that has yet been practised in the naval hospitals, whether at home or abroad, that something beyond courses of medicines and all local applications, is wanted to produce those salutary changes in the body which is our desideratum. Some healing power of opposite principles to the exciting causes is to be discovered. This is perhaps slow in its operation, but I would conjecture that a total change in the modes and habits of life would be effectual.

The following communication on this subject comes from the able pen of Dr. Mitchell. Every thing that comes from the hands of the adventurous professor is valuable, and I shall present it to my readers without further comment.

“ Having been much instructed by your chapter
“ on malignant ulcer, in the second volume of your
“ Medicina

“ Medicina Nautica, my attention has been a
 “ good deal directed to the subject since I read
 “ your book.

“ I have made a number of experiments in the
 “ New York hospital on the qualities of pus; and
 “ the reports of Mr. Kinge, the apothecary, and
 “ Mr. Brower, the house-surgeon, are decisive in
 “ evincing the *acidity* of the liquid contained in
 “ foul and ill-conditioned ulcers. In syphilitic
 “ sores of a bad character, the sourness of the dis-
 “ charge was considerable enough to change the
 “ purplish colour of *litmus paper* to a red in four
 “ or five hours. In cases where the matter was
 “ good and equable, and where the healing process
 “ was going on kindly, no acidity was discovered
 “ in any instance. This quality I take to be a
 “ morbid condition of the effused humours, and
 “ these do not appear to be sour when secreted,
 “ but to become so by exposure to the air. Such
 “ matter evidently has the power of decomposing
 “ oxygenous air, and thereby becoming acid; and
 “ where this decomposition goes on rapidly, it is
 “ probable the caloric, which is disengaged, is one
 “ cause of the burning and smarting felt on the
 “ surface and margin of the ulcer.

“ Presuming this acid state of the liquid of foul
 “ ulcers to be both the cause of the erosion of the
 “ adjacent parts and of the febrile symptoms which
 “ so often accompany this condition of things, I
 “ have undertaken to overcome it, and heal the
 “ sore, and consequently cure the fever, by means
 “ of *alkalis*. You may have seen the published
 “ accounts of the advantages of using carbonate of
 “ potash in *primary* venereal ulcerations. The
 “ chancres soon heal; there is no sloughing or de-
 “ struction of parts; and, what is very comforta-
 “ ble, alkaline applications *do not occasion buboes*,

“ as

“ as often happens when septite of silver or lunar
 “ caustic is used, the acid of which, on its separa-
 “ tion from the metal, seems sometimes to be ab-
 “ sorbed, and to exert its pernicious powers upon
 “ the inguinal glands. The surgeon, in such cases,
 “ cures his patient of a chancre by giving him a
 “ bubo ! I have since tried the efficacy of alkalis
 “ on *secondary* ulcers, and with agreeable encou-
 “ raging consequences. On painting them over
 “ in their foul state, with ley of tartar, applied by
 “ means of a camel’s hair brush, once or twice a-
 “ day, according to circumstances, and dressing
 “ between whiles with lime-water or soda ointment,
 “ appearances altered surprisingly, and the sores
 “ healed. The sum of the evidence on this sub-
 “ ject I have drawn up in the form of a letter ad-
 “ dressed to you, and now published in the 2d
 “ No. of Vol. IV. of the American Medical Repo-
 “ sitory, New York. The piece is intended as a
 “ sequel to your essay above referred to, and I am
 “ extremely anxious that you should see it. *

“ Here now acids exist in ulcers, and alkalis
 “ will cure them. Suppose the ulcer not syphi-
 “ litic, and the acidifying process to go on rapid-
 “ ly and copiously, what will happen ? Why, cer-
 “ tainly, in the heat of the human body of 96° or
 “ thereabout, a portion of it will be volatilized ;
 “ and, evaporating from the sore where it was
 “ produced, will taint or infect the surrounding air,
 “ and reaching the neighbouring patients, if there
 “ be any, will act injuriously upon their ulcers, or,
 “ if strong and plentiful enough, will kindle up fe-
 “ vers in their constitutions at large.

* October 31st 1801. My bookseller has not yet been able
 to procure me this ingenious essay of the learned author.

“ This

“ This vapour I consider, in its constitution and
“ qualities, but a modification of, and nearly akin
“ to, the septic acid exhalations, which we know
“ to produce most fatal effects, when issuing from
“ a corrupt jar or a barrel of putrefying beef, and
“ from heaps of decaying hides and fish. The
“ venom in these cases, when acting upon human
“ bodies, often destroys their life in a few days;
“ while the virus thus produced in sores kindling
“ up fever, and wasting away the health with dif-
“ ferent degrees of rapidity, according to its
“ strength and quantity. The symptoms of *hectic*
“ are no doubt thus referable to *aërated pus*, ab-
“ sorbed and working mischief. I have even this
“ day remarked *some reddening of litmus paper* lying
“ in the purulent matter expectorated by a phthisi-
“ cal patient. I could, if my paper would permit,
“ write you much more; but I must conclude with
“ assuring you of my cordial esteem and regard.”

The use of the *carbonate of potash*, as here recom-
mended by Dr. Mitchell, has, by my advice, been
frequently tried in very foul ulcers by Dr Stewart
of the Prince Frederick convalescent ship in Ply-
mouth harbour. The appearance of the sores was
soon altered for the better; and, in some obstinate
cases that had resisted every application, it effected
a cure. Whatever be the best manner of explaining
the fact, it is certain that no wash is better for in-
veterate ulcers than good soap and water, which must
chiefly act from the alkali contained in the soap. I
only wish that the use of pure soap and water was
more frequent than they are in daily washing and
cleaning all ill-conditioned sores; for I am well con-
vinced this practice would much contribute to the
cure.

December

December 17th 1801. Since compiling the chapter on Malignant Ulcer, I have been favoured with the following letter on the same subject from a young surgeon whose abilities and industry I greatly respect.

To this letter I have subjoined such remarks as its contents seemed to suggest. Some of Mr. M'Arthur's ideas differ from mine; in this he resembles others of my correspondents on this ulcer: but I hope to obviate what militates against my doctrine.

H. M. Ship Belleisle in Torbay,
15th December, 1801.

“ DEAR SIR,

“ Until this morning I did not recollect the promise I made to send you some account of the malignant ulcer that prevailed in his Majesty's ship *Ganges* in the year 1797, while I was her surgeon. She had been employed in the West Indies several years at the beginning of the war, and had arrived from thence at Spithead in October 1796. Between this time and my appointment to her, the 1st June 1797, about 200 men had been sent to the hospital, near two thirds of these were ulcers. On the 4th June we sailed for the North Sea to join Admiral Duncan's squadron, and continued off the Texel until a few days before the 11th October. I soon found a strong disposition to ulcers on board, the most trifling hurts in a few days degenerating into extensive sores. A small scratch that at the last dressing discharged healthy pus, and apparently had every disposition to heal, at the next was found painful, the discharge dark and streaked with blood, its edges livid, and the surrounding integuments inflamed. From this beginning,
“ a gan-

“ a gangrene extended with great rapidity, occupying, if situated on the legs or thighs, &c. in three or four days from five to ten or twelve inches in circumference. When the diseased parts were thrown off, the ulcer would soon fill with healthy granulations, and would contract considerably, or was nearly cicatrized over, when a small black speck, not larger than the head of a pin, would appear upon its edge; from this point a second gangrene commenced, and extended as rapidly as the former. This was their most common beginning and progress, but frequently, instead of a sphacelus being formed, the new granulations, the lips of wounds, the surfaces of burns, blisters, &c. seemed to be converted into a kind of thick adhesive pus, which adhered firmly to the parts underneath; these did not extend so rapidly as the former, but the diseased action continued much longer. In whichever way the ulcers extended, they were very painful, the discharge considerably bloody and offensive; the patients were restless, complained of headach and thirst; the skin was hot and dry, and the pulse, for the most part, full. These febrile symptoms disappeared as the diseased parts were thrown off. The first gangrene, except when situated on the fingers or toes, or the cicatrice of old ulcers, seldom destroyed more than the integuments; the next affected the muscles, and, if situated on the tibia or bones thinly covered, destroyed the periosteum, leaving a considerable portion of the bone denuded and carious. Every subsequent mortification affected the muscles more and more; in one instance the gastrocnemii were completely destroyed. This ulcer first appeared on board in the West Indies about the beginning of 1795,

“ and,

“ and, from every information I received, it did
“ not deviate from its original character until it
“ disappeared in January 1798. It is somewhat
“ singular that the marines and landmen who were
“ sent on board to complete her complement of
“ men, a considerable time after her arrival in
“ England, were as susceptible to the same kind of
“ sore as the old part of the ship’s company, and
“ men in good health, and to all appearance of a
“ good habit of body, as those who had been pre-
“ viously reduced by diseases. It was also parti-
“ cularly remarked, that the men who were em-
“ ployed as nurses, and almost every person who
“ were put into the sick-bays were soon afflicted
“ with ulcers, and that some men who had suffered
“ amputations, and had been permitted to remain
“ in the sick-bays where the ulcers were, did not
“ recover so well as others who had been separated
“ and put in a separate berth under the half-deck.
“ I did not observe any symptoms of scurvy among
“ the men afflicted with ulcers, excepting some-
“ times a wasting of the gums, which I attributed
“ more to a want of cleanliness and the use of to-
“ bacco than to a scorbutic diathesis. In the treat-
“ ment of these ulcers I thought that bark and
“ wine given during the progress of the gangrene
“ augmented the local inflammation and constitu-
“ tional affection, but the moment the sphacelous
“ began to separate, and the febrile symptoms
“ subside, they were very serviceable in supporting
“ the strength under sometimes an excessive dis-
“ charge; nor was opium in the earlier stages of
“ so much use in alleviating pain as might have
“ been expected.

“ Warm poultices seemed to accelerate the gan-
“ grene, but they also hastened the separation of
“ the slough; on the contrary, cold solution of the
“ acetite

“ acetite of lead constantly applied to the fore and
 “ surrounding parts, retarded the gangrene, but
 “ the separation of the sphacelus was more tedious.
 “ The nitrous fume was applied to ulcers in every
 “ stage, but particularly to those that continued in-
 “ dolent after the separation of the mortified parts,
 “ or such as were covered with the thick adhesive
 “ pus, but I did not observe any good effect
 “ from it: it was however of considerable use in
 “ destroying the bad smell in the sick-berth while
 “ the ulcers were dressing. I thought the hydrarg.
 “ nitrat. rub. prevented, in some instances, the ul-
 “ cers from extending after they had put on the un-
 “ healthy appearance, and latterly, in consequence
 “ of reading Dr. Rollo’s account of the ulcer that
 “ prevailed at the Artillery hospital, the black speck
 “ was destroyed with the *argentum nitratum*; in
 “ some cases it was successful, in others it had no
 “ effect. As the cold weather set in, the disposi-
 “ tion to ulcers seemed stronger. Towards the
 “ latter end of December, being completely disap-
 “ pointed in every hope I had of curing them on
 “ board, and perplexed at their daily increase,
 “ I determined upon sending all the ulcers on shore
 “ to the hospital at Yarmouth, and at the same
 “ time applied to the Commissioners for Sick and
 “ Hurt for a vegetable diet for the ship’s company.
 “ The Board in the most liberal manner directed
 “ Captain M’Dowall to cause to be purchased ve-
 “ getables not exceeding four pence a man *per*
 “ *diem*, but I believe they did not amount to more
 “ than three halfpence. Twelve dozen cabbages,
 “ five bags turnips, three ditto carrots, and four
 “ bushels of onions, were daily put in their broth
 “ or distributed in the messes. The vegetable
 “ diet commenced, and the remaining ulcers were
 “ sent on shore between the 25th and 31st of De-
 Vol. III. K k cember;

“ cember; and, by the middle of January, not a
“ vestige of the ulcer remained on board. There
“ were indeed several ulcers upon the sick-
“ list, but had not the smallest resemblance to the
“ ulcers that had made such ravages on board dur-
“ ing the last three years. Between the 10th Ja-
“ nuary 1798 and November following, only one
“ ulcer was sent to the hospital, but the preceding
“ seven months there were no less than seventy. I
“ shall make no remark upon this fact farther than
“ observing, that, although the vegetable diet
“ would seem to have destroyed the disposition to
“ ulcers, yet these ulcers did not at all resemble the
“ scorbutic ulcer, but would alternately heal and
“ extend long after e scorbutic diathesis must have
“ been removed by the use of lemon-juice and ve-
“ getables, even if such a diathesis had originally
“ existed. I also thought the removal of the ulcers
“ from the ship was of considerable utility, as the
“ air of a sick-berth where there are ten or twelve
“ ulcers, some of them in a state of gangrene, must
“ be vitiated. Would men breathing this conta-
“ minated atmosphere acquire a similar habit with
“ those already afflicted with ulcers? And would
“ they not, in consequence, be susceptible to the
“ same kind of sore? Mr. John Malone, my pre-
“ decessor, was in the Ganges, in the West Indies,
“ and can give you much useful information. He
“ had an ulcer upon his leg on their passage to
“ England; but, whether it was of the same kind
“ with the others I have not been able to learn.
“ The depravity of some of our people is worthy
“ to be noticed. Although many had suffered am-
“ putation, yet this could not deter some from ap-
“ plying irritating substances to their sores, in or-
“ der to become objects for the hospital. One
“ was detected with a halfpenny, another had a layer
“ of

“ of salt fish, and a third soap mixed with lime,
 “ on their sores: I suspected several others, but I
 “ believe the practice never was general. If in
 “ this hasty account you meet with any thing that
 “ may corroborate or add to any information you
 “ have received respecting this destructive ulcer,
 “ it will give me much pleasure; but as I have
 “ wrote this without any kind of method, I have to
 “ beg you will consider it as if it were merely a
 “ verbal communication. With the best wishes
 “ for your success in the prosecution of your la-
 “ bours,

“ I am, Dear Sir,

“ Your most obedient

“ And very humble servant,

“ D. M'ARTHUR.”

“ To Dr. TROTTER,

“ Physician to the fleet, Plymouth.”

The Character of this ulcer exactly corresponds with our history of the Channel sore, Vol. II.

Mr. M'Arthur has in this narrative brought forward some strong facts that would seem to countenance the contagious nature of the sore. The marines and landmen who were embarked to fill up the complement, were as susceptible of it as the old part of the ship's company: but it is very probable that these marines had lately come from foreign stations, and had in their constitutions that disposition which was so favourable to ulceration in a wounded part. The landmen might also be of this description. It appears plain that the disease had spread fast after the people went to sea, at which time spirits must have been served, according to custom; and bark and cinchona, as well as opium, in the first or inflammatory stage, he observes, did harm.

What is said with respect to the nurses and others in the sick-berth being very liable to the ulcer, cannot confirm its infectious nature; for they, like others, who had come from the West Indies or Mediterranean, must have possessed the disposition to the sore from antecedent causes.

In those ships whose services have been confined to the Channel, not more than ten out of the hundred, at the most, have been seized with this ulcer, including every the slightest degree of it. But in the Ganges, from Mr. M^rArthur's account, a third of the ship's company were sent on shore as hospital cases. This is invincible evidence that we must look to causes that do not act with their full force in the home seas, as bringing it into action.

The condition of a crowded sick-berth with ulcers, certainly suggests precautions that ought to be strictly attended to, whether the disease is contagious or not. Patients in the debilitated stage want pure air, to renovate and stimulate the powers of life, which cannot be obtained where a number of people breathe in a small space. But large sphacelating sores, like those in discussion, where immense portions of animal matter are undergoing decomposition, cannot fail of loading the air with unrespirable substances, in the form of elastic fluids, and must be deleterious. The sick are thus retarded in their cure, and the healthy gradually reduced to a condition of disease.

This able surgeon was moved from the Naiad into the Belleisle in September 1801, where some tendency to this sore was apparent. Mr. M^rArthur remarks, "In a number of men there is an evident disposition to ulcers: slight contusions, or scratches upon the lower extremities, require great attention to prevent them from running
" into

“ into extensive sores. This disposition is not
 “ however general, for there are a great many
 “ men with boils; these burst and heal without
 “ difficulty.”

Here again is another instance in confirmation of our general remark on the production of this sore. The *Belleisle* had been lately commissioned, and manned from ships just returned from foreign stations; but the disposition to ulceration, though evident, was but slight, only eight cases appearing in September.

The next occurrence of this devastating ulcer was in the *Royal George*, in the month of January 1802, in which thirty-six cases appeared; some of these very severe. Mr. M'Donald's narrative entirely disproves the suspicion of its infectious disposition; and he takes notice of the use of spirituous liquors, that have on all occasions had the chief share in forming that habit of body so productive of ulceration.

REMARKS.

“ Since our leaving Cawsand-Bay we have been
 “ severely afflicted with several sores of considerable magnitude; whither they originated from
 “ contusions, wounds, scalds, chilblains, or blistered parts, &c. they very soon assumed symptoms of very great malignity; and, with
 “ very few exceptions, they all observe the same degenerate tendency, notwithstanding we have
 “ paid the greatest attention in dressing, to obviate
 “ the pending evil; the disease pursues such a magisterial course, ending only in a vast destruction of organized parts. It appears to be
 “ a dis-

“ a disease of very high excitement ; but I am
“ doubtful whether it be contagious ; although it
“ appears to be endemic at present in this ship : I
“ have distinctly marked several sores in our sick-
“ berth, at the same time, with some of the worst
“ cases under our consideration, without ever
“ being infected by them. Also, a patient has
“ complained to me for a small pimple, arising
“ from a hurt, and where it was impossible to
“ trace his exposure to the infection of any
“ sore, yet so rebellious would the case prove,
“ that in the course of a day or two, it would
“ rapidly pass through the several stages of in-
“ flammation, gangrene, and sphacelus, that all
“ our art has as yet devised, is quite inadequate to
“ arrest its progress in the destruction, to a con-
“ siderable extent, of the adjacent integuments,
“ muscles, membranes, and even the bones also,
“ in some instances, have not escaped the general
“ devastation. We cannot impute any thing of
“ a scorbutic taint in our people ; they are now
“ living (and have been for months back) on
“ more than two-thirds of fresh beef, beer, and
“ plentifully supplied with vegetables. Neither
“ is there any thing in it of a scrophulous nature.
“ I have not the least doubt but that the very
“ full and generous manner our people live while
“ in port, and the easy access they find for *spiri-*
“ *tuous liquors* in that state, have no small share
“ in rendering their habits susceptible of very
“ great excitement in order to produce and sup-
“ port, for a given period, this very peculiar
“ disease. With respect to our curative indica-
“ tion, we have at the commencement of the
“ disease entered strictly upon the antiphlogistic
“ plan, by means of blood-letting, brisk purges
“ of neutral salts, plenty of thin diluting liquors,
“ and

“ and low diet, abstaining from all animal food
“ for a certain time Our topical applications have
“ been various; in the first stage of this virulent
“ sore, astringent applications were used cold, viz.
“ solutions of cerus. acet. sal-ammon. crud, ace-
“ tous acid, &c. all had their turns, pledgits and
“ soft compresses, with suitable bandage, were
“ kept well moistened, and the limb held in the
“ horizontal posture; and although all these have
“ been duly persisted in, yet in vain did we look
“ for these discutient virtues we had reason to ex-
“ pect from them, in order to check the virulent
“ inflammation, tumefaction, and ulcerative ten-
“ dency of this grievous malady! Bark and opium
“ also seemed to do harm during this stage of the
“ complaint, by increasing the nausea and sick-
“ ness; nothing, in short, appeared to conduct the
“ disease, in happy unison through its whole course,
“ better than the relaxing powers of emollient
“ cataplasms, frequently renewed; fomentations
“ and scrupulous cleanliness, in wiping off all the
“ foetid acrid discharge, as far as it was compa-
“ tible with the nature of the sore. Thus far, I
“ acknowledge, Sir, my incapacity of giving
“ you a clear and comprehensive idea of the
“ leading features of this monstrous disease. You
“ have, in a very popular work, given such a
“ striking delineation of it, as it has appeared be-
“ fore in several ships of the Channel fleet, that
“ no one of any observation can mistake the pre-
“ sent ulcer.

“ And it will appear to you how necessary it is
“ to send all the worst cases out of the ship, not
“ only on account of the unfortunate sufferers, but
“ also for the comfort of those who may remain
“ on board.”

By

By a letter from Mr. Burd, surgeon of the Ville de Paris, who frequently visited the Royal George, I am further informed of the practice of *drinking raw spirits* in that ship; which became of such importance as to attract the attention of Admiral Cornwallis. We thus find a similar train of causes productive of this ulcer, wherever it has appeared.

The report of the following month mentions a favourable change in the condition of the ulcers; and the further progress being checked, after sending fourteen cases on shore, and one death on board. The treatment was such as the appearance and disposition of the sores naturally suggested; and the utmost attention to cleanliness. The number affected did not exceed forty-eight. Such was the scarcity of surgeon's mates, that this ship, instead of five, had only one; so that the labour fell hard on Mr. M'Donald. In this month the ulcer entirely disappeared. The slovenly practice of correcting the smell of the sloughing sores by fumigation, was never tried here; so perfect was the employment of cleanliness and ventilation on the part of officers and surgeon, that nothing was left to that species of quackery.

MEDICINA NAUTICA.

CONCLUSION.

WITH this Third Volume I have now finished my task. Fully sensible of the dignity of my subject, I trust that I have defended the SICK-BED of the gallant naval officer and seaman with becoming decency, spirit, and independence. Sentiments such as breathe in these pages may not be palatable to every one; but it is no unworthy confidence to flatter myself with, that they have some chance of being useful to posterity when the sloth and indifference which it has been my province to assail can only be remembered by the activity which they called forth. Few persons can measure the degree of fatigue, in body and mind, and the expence which attend pursuits of this kind amidst the bustle of naval service. My official postage has often exceeded *seven shillings per diem*, and a new medical publication frequently taken my *last guinea*!

There is scarcely a point of duty connected with health that has not undergone more or less discussion in these volumes. We have seen a whole fleet cleared of INFECTION without eating the smallest
 Vol. III. L1 alarm,

alarm, and we have witnessed the correction of a general SCURVY without a single ship remaining inactive. But above all, it is hoped, that new modes of *feeling and thinking* have, during these measures, been engrafted on nautical arrangements. The British seaman, hitherto neglected under disease, has been raised to his station in the scale of maritime tactics, and the studies of MEDICINE have newly strung the sinews of WAR. The chapters on contagion and scurvy, as well as others, afford ample examples of this ; and in proportion to the full employment of our precepts, has success been estimated. A legislative bounty has been lately awarded to a doctrine which I have uniformly opposed. The author of the *Nitrous Fumigation* may now act the part of Horace's miser, "*populus me sibilat,*" &c. He may perhaps sneer at the *phillipics* which are poured forth against his vapours in our volumes, and hugg the *five thousand pounds* ! But it is my duty, as a physician in a public department, to contrast this gift of Parliament, and the encomiums which have been pronounced by Messrs. Wilberforce and Erskine on what I conceive to be *demonstrated quackery*, with a narrative that ought to draw tears of pity from every brave man that ever received relief or comfort from the hands of a medical friend on the bed of affliction. This bounty, I say, has been conferred at a time when not less than 200 surgeons, and 300 surgeons' mates were discharged from the navy of the country without a shilling of *half-pay*, or any thing that can be considered as a *retaining fee* ! And, after services the most splendid and honourable, in which the medical character was ever engaged,

—————Turn thy complexion there !

Patience, thou young and rose-lip'd cherubim ;

Ay, there, look grim as hell !

But this is not all: such of these gentlemen as are fortunate enough in fixing on shore, will not quit their retirement when another war commences, and thus an immense loss of experience in naval practice will be sustained; and the brave man must be again committed to the treatment of some raw and untutored adventurer in physic.

Surely such a cause as this would better become a British Senator than the empirical trumpery of any *fumigating* process. For on the temporal encouragement bestowed on the medical profession, must in a great measure depend the manly and active exertions of the duties which belong to it.—*Sic deus faxit!*

N. B. COMMUNICATIONS for the future editions of this work may be addressed, *post paid*, to the author.

FINIS.

